# Report of

# The Maryland Agricultural Society--
# Maryland Farm Bureau Federation

INCLUDING REPORTS OF THE

Maryland State Horticultural Society,
Maryland Crop Improvement Association,
Maryland State Beekeepers' Association
Maryland Vegetable Growers' Association
Maryland Stockmen's Association
Maryland Tobacco Growers' Association,
Maryland State Poultry Council,
Home and Community Committee Meeting
4-H Club Conference.

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REPORT OF THE

# MARYLAND AGRICULTURAL SOCIETY

THE

# MARYLAND FARM BUREAU, Inc.

*Including Reports of*

The Maryland State Horticultural Society

The Maryland Crop Improvement Association

The Maryland State Beekeepers' Association

The Maryland Vegetable Growers' Association

The Maryland Stockmen's Association

The Maryland Tobacco Growers' Association

Maryland State Poultry Council

Home and Community Committee Meeting

4-H Club Conference

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**Volume XXII, for the Year 1937**

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EDITED BY C. E. WISE AND T. B. SYMONS,

BALTIMORE, MD.

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Vol 22

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## LETTER OF TRANSMITTAL

To His Excellency, Harry W. Nice,
Governor of Maryland.

Sir:

I herewith submit to you, as directed by the Act incorporating the Maryland Agricultural Society, and also the Horticultural Society, this report for the year 1937, which contains a detailed statement of the receipts and expenditures of the Society as approved by the Executive Committee and Advisory Council. It contains the proceedings of the Twenty-second Annual Meeting of the Maryland Agricultural Society, Maryland Farm Bureau, Inc., and annual meetings of the Affiliated Associations.

I trust that an inspection of its contents will convince you that the funds appropriated for this purpose have been wisely and judiciously expended.

Respectfully submitted,

CHARLES E. WISE, JR.,
Secretary.

May, 1938,
Baltimore, Md.



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**Maryland Farm Bureau Wool Pool, Inc.**

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Secretary, Mr. C. E. Wise, Jr. ..... Sherwood Building, Baltimore, Md.

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# REPORT

OF THE

## TWENTY-SECOND ANNUAL MEETING

OF THE

# Maryland Agricultural Society
# Maryland Farm Bureau Federation

## JANUARY 13-15, 1938

**Lord Baltimore Hotel, Baltimore, Maryland**

### THURSDAY, JANUARY 13th

### MORNING

Mr. Claude Phillips presiding, called the meeting to order at 10.00 a.m.

Mr. Willis E. Derr of Frederick, pronounced the invocation.

MR. PHILLIPS: We will now have the roll call by Mr. Wilbert Smith.

Mr. Smith called the roll for the seating of Directors.

MR. PHILLIPS: Our first speaker this morning is the President of the Maryland Farm Bureau. You know down in Wicomico County each year in October we have an oyster roast for our members. This past year we had 600 or 700 people at that oyster roast, and Mr. Nuttle was with us. I was really afraid we,—or at least the Directors of the Maryland Farm Bureau, would have to look for a new Farm Bureau President this year. At any rate, he survived and I will now present Mr. Nuttle, who will deliver his annual address at this time.

MR. NUTTLE: I want to suggest to you if you want a good time go to the Wicomico County oyster roast next fall. I am not the only one who can eat oysters.

### PRESIDENT'S ADDRESS

HARRY H. NUTTLE, President

As your President, I again come before you in annual session to report on the activities of the year. Of course, you are aware that being president of the Maryland Farm Burau is a part-time job. As I understand it, I am to preside at your annual meeting, at meetings of your directors and executive committee, advise with your secretary on problems and

activities, attend banquets and picnics when possible, and represent your organization in state and national conferences, when elected or invited so to do. The secretary is a full-time officer, the executive in actual charge of your organization. It is his duty to manage the office, direct the field men, carry out your orders and those of your directors; in general, head up all the activities of our Farm Bureau. My report should be rather general, his more in detail.

I wish to compliment Mr. Wise on the way he is functioning in his office. With the assistance of the two fine field men and a very efficient office force, Maryland Farm Bureau is moving forward.

This is the big week of the Farm Bureau year. It is a time of stress for your officers but should be a period of thorough enjoyment for you. Association with other counties who are facing and solving the same problems that you struggle with, should strengthen your hands, while the inspiration brought by our speakers should hearten us to fight on.

At this time I desire to call your attention to the fact that two of our directors are absent, because of serious illness. We truly miss Chas. T. Cockey, Jr., whom I succeeded as president. Maryland Farm Bureau never had a more loyal member. A gentleman of the old school, he is truly interested in the welfare of the farmer and his heart is with us today. If his health will permit I hope we can find time to send a delegation out to see him and carry to him our love and best wishes for an early recovery. We want him to know that we miss him.

The other director who cannot be with us is M. Fred Carver, president of the Somerset County Farm Bureau. Though Somerset has been organized only two years, President Carver has in that short time led his county to the highest place on the Eastern Shore where farm bureau activity is considered. In spite of his serious physical condition he hoped until Friday to be able to come to this Convention. I hope you will send him a message that will cheer him in his affliction and let him know that we are thinking of him today.

In addition to Somerset County, another newly organized county, Calvert, has had marked activity this year. They say a new broom sweeps clean. I do not know how much that has to do with Farm Bureau, but it is true that Calvert and Somerset have done many things this year that some of the older counties might well consider and imitate. Congratulations Calvert and Somerset.

I also want to welcome into our family a new member, St. Marys. You are member 21, Mary, or should I say St. Mary? We are glad to have you join us and help us in the big job ahead of us.

The one problem that has worried me more than all others put together has been our relationship to Southern States Cooperative. In discussing that I want to say emphatically that, in those counties where Southern States is in competition with our already established co-ops, I am for our co-ops 100%. Now, let us review the situation that faced us two years ago. Our Agricultural Corporation was well managed but owned no facilities, received insufficient support to enable it to pay its

way. Its capital was being impaired and its future was dark, the more so because Southern States was already in competition with us here in Maryland. Southern States made an offer to exchange their stock for that of the Agricultural Corporation, which offer was accepted and only needs approval by two-thirds of the stockholders of the Corporation to be consummated. It is unthinkable that this question shall be permitted to remain unsettled much longer.

Another problem that faced us this year was our attitude toward the Farm Bill and controlled production. We took the position that we favored the conservation program more than the reduction in acreage. We did not feel that our farmers were ready for enforced control of acreage even though we realize that there should be some way to prevent or control those surpluses which cause prices to drop and remain below the cost of production. Other industries protect themselves from such ruinous fluctuations, and there ought to be brains enough somewhere among our farm leaders to discover a plan that will work for us. Export debenture and control of acreage are two plans proposed. I think we should go slow in reducing acreage as long as hundreds of thousands of our people do not have enough to eat or are partly clothed. We should work on the distribution evil. When one order of sweet potatoes costs one-third as much here in the Lord Baltimore Hotel as a farmer in Wicomico can get for a hamper, there is something wrong. Many costs of distribution are legitimate but such charges as are put on some of our products should make both consumer and producer rise up in mighty wrath.

For years we have talked of the unfair load of taxation that real property has to bear, and advocated the income tax as a substitute. We talked income tax in season and out of season without apparently making much impression, but at the last session of the Maryland Legislature an amendment to the Constitution, which will permit a graduated income tax, was adopted and is to be voted on at the election this fall. Beginning now we want you to talk income tax. Impress it on your neighbors, that a cross mark for the income tax amendment is the most important mark on that ballot, more important than all the other marks, even though a governor is to be elected. That's one job we have ahead of us. Let us not fail.

I wish to pay tribute to the extension service of the University of Maryland, a most loyal self-sacrificing and able group of workers. The utmost harmony should exist between us, for we are both working toward the same end—the advancement of the welfare of our rural people. I know we all appreciate their support. Frankly, I would not want to lead a Farm Bureau in a State which had no extension service. Of course, the relationship varies in different counties. In one or two counties the county agent sits in the driver's seat of the County Farm Bureau automobile largely because no one else will drive. That should not be. Then in some other counties the County Agent is kept on the back seat as a mere passenger. That also is not right. My vision is that of the Extension Service and the Farm Bureau serving in the position of

the twin blocks of the V-8 motor synchronized, harmonized, together pulling the load.

Not all the duties of my job as president are burdensome. There are many pleasures too,—to go throughout the state, eat turkey with you, then try to pay for my turkey with a speech, is a real treat, at least for me. I am afraid some of you who follow me from county to county may be put in the position of the wife who heard her husband tell the same joke time after time. She always laughed at it and seemed to enjoy the repetition, so that some neighbors decided it must be either a very good joke or she was a very good wife. I'm not so sure my jokes are good, so I have decided you are good sports. Indeed, the greatest pay I receive, aside from the satisfaction I have in knowing I am doing my bit in helping improve conditions for our farm folks, arises from the friendships I have formed with so many of you.

I am reminded of that Bible quotation: "Ye are the salt of the earth"—you, who have vision to look beyond your own farm and community and see that farm people must stand together if there is to be any future to farming for us or for our children, and then after you see the need—give your time, thought and money to the often so thankless job of—getting your neighbors to also lift their eyes from the furrows at their feet to the hills of cooperation and organization. I repeat—you are the salt of the earth, or, to use another metaphor—the leaven through which we hope and pray the whole mass of rural people may be transformed into something bigger and better and more nearly what God intended the tiller of the soil to be. And you are being paid in a currency better than dollars and cents. It is only as we get interested in something outside of our own selves that we grow. We all know men and women too who can't see beyond their own farms, and have you noticed how they shrivel and get smaller and smaller, both mentally and morally, as they get older. But *you*, the salt, the leaven, are interested in your brother's welfare; you work shoulder to shoulder with him to advance the interests of your community, and as you strive your capacities increase and you become a bigger man or woman than you were, and out of this association, this effort, this consecration, comes a joy, a satisfaction, a happiness, that no selfish accomplishments can ever give.

May we this day dedicate ourselves anew to the task to which we have set our hands.

MR. PHILLIPS: At this time we will dispense with the regular program just for a few minutes in order to give the Chairman of the Resolutions Committee an opportunity to present an urgent matter.

MR. TURNER: Mr. Chairman, ladies and gentlemen, yesterday afternoon Mr. Louis Merryman called from Washington, and told me that they were going to reduce the appropriation for the eradication of Bang's Disease something over $60,000, and that that might very seriously curtail the work that was started. You will recall that the Maryland State Legislature through the influence of the Maryland Farm Bureau made a $100,000 appropriation for this, and we got from the Federal Government

$157,000. Mr. Merryman asked that we prepare a hurry-up resolution and send to our two U. S. Senators. Mr. Tydings being on the Appropriations Committee, helping to prepare the budget in Washington, might be able to help us. Mr. Merryman has done as much as any man in the United States towards bringing about these appropriations to fight this disease. I want to present the following resolution:

We, the Maryland Farm Bureau, in convention assembled resolve that if there is any cut in the Federal appropriation for Bang's Disease eradication it be such as not to seriously curtail the orderly eradication of this disease as planned.

We instruct our officers to wire a copy of this resolution to our U. S. Senators at Washington.

I move the adoption of this resolution.

Mr. Connick, of Prince George, seconded the motion and it was carried.

MR. PHILLIPS: We will now have the annual report of our Secretary, Mr. Wise, Jr.:

MR. WISE: I want to contgratulate you for having so many here today, especially in view of the condition of the roads. After all it is a real compliment to the organization and shows the enthusiasm and spirit of us all.

## SECRETARY'S REPORT, 1938

C. E. WISE, JR., Secretary-Treasurer

Ladies and gentlemen of the Farm Bureau, I have the pleasure of reporting to you that the year 1937 has been one of progress and accomplishment for our organization. Much has been done to better Maryland Agriculture but more remains to be done in the coming years. We have trained leaders and loyal workers in the state and in the counties who are constantly working for the betterment of the organization. As the activities increase, county leaders look more and more to the state office for guidance.

Consequently, the directors have followed the policy of building up a trained personnel in the state. The Board is to be commended for this foresighted policy and the results obtained have more than justified the outlay.

In Martin Sutton and Wilbert Smith, Maryland has two loyal, hard-working fieldmen. The office force has worked conscientiously and efficiently; the officers and directors have cooperated, and the Extension Service has constantly aided us in our work. It has been a pleasure to work with our President Harry Nuttle who has given untiring effort to the Farm Bureau program.

By means of the Maryland Farm Bureau News Letter, the state office has kept its members informed. In December the size of the paper was doubled, making it possible for Art Weed and your secretary to cover interesting events and developments more completely.

Last year's activities started with a series of livestock and wool meetings in twelve counties. The purpose of these meetings was to encourage more producers to take advantage of cooperative services. Mr. Miles, Manager of the Eastern Livestock Marketing Association, will report later on the detailed results. Talbot, Carroll and several other counties pushed livestock marketing aggressively, and the Eastern's business in Maryland increased over 1936. Additional support will mean better returns and eventually result in patronage dividends to cooperating producers of livestock.

In spite of lower wool production, the Maryland Pool handled 4,000 lbs. more than in 1936. Though small, the Wool Pool handles approximately 12% of all Maryland produced wool, which in turn, tends to raise the price paid for all Maryland wool. During the past five years the Pool has netted cooperators 5.4c more on each pound sold than it would have brought at the local price. In the past three years the number of producers pooling wool has doubled.

Every year our insurance services have shown an increase. A detailed report will be made later by Zach Turner who is largely responsible for the excellent results. In October our Board of Directors approved a program of cooperation with the insurance force which many of the counties have taken up and all counties are urged to adopt. The more we inform our members on their insurance requirements, and how to meet them with our own unequalled service, the better we can serve them.

With the help of Martin Sutton, six county cooperatives formed an association. Its purpose is to assist the county units in the solution of their mutual problems, credit, merchandising, finance, and business promotion. The Maryland Farm Bureau has long encouraged and sponsored cooperatives, but it has never followed through to give them the advantages that other states provide. Now a start has been made to assist locally owned, locally controlled cooperatives. This is one service that should be expanded as the results in these six counties point to many possibilities. These cooperatives made a profit for the year of $7400. This demonstrates that Maryland farmers can manage their own business. The Maryland Farm Bureau should be ready to assist any county that desires to establish its own cooperative to take advantage of the cooperative wholesale manufacturing services of the Southern States Cooperative.

In June, as beans were being harvested, an emergency was caused by a strike at the canning plant in Cambridge. The Farm Bureau asked the cooperation of the Hillsboro-Queen Anne to find an outlet for these beans in order to prevent the loss of $250,000. County Agent McKnight, assisted by Martin Sutton, contacted the growers; Art Weed supervised the assembling and packing; Hiram Woodward secured the markets through the chain stores and the crop was moved without loss—an example of real cooperation, started by the Farm Bureau, that raised the price of beans from $28 per ton to $40 and $50 per ton.

As a follow up of this emergency, two meetings were held to inform

canning crop producers of recent labor developments that might affect them. A state committee was formed and a survey made of production and plant facilities. Luckily this information was never needed but through the efforts of the Farm Bureau, the producers were prepared for possible emergency.

Later in the year, President Nuttle and your secretary attended several conferences on the tomato situation. Two meetings of growers were held. A market glut was threatened and the surplus commodities corporation of the AAA made plans and put a bottom under the tomato market at a time when it was demoralized. A week of rain and hot weather cut the crop just after the announcement, but the program helped the tomato prices more than most farmers realize.

Producers of truck crops in the Baltimore area have had a poor market for their crops for the past several years. The Farm Bureau and Extension Service have struggled with this problem for a long time. Many factors must be corrected before the situation can be bettered. A state grading law is necessary to assure local growers a market for their produce and to prevent unfair competition from the low grade products often dumped on the Baltimore market from other sections. A state grading law was introduced and pushed in the Legislature, but it was not passed. This defeat was due to lack of support by producers who did not have complete information. One of the duties of the Farm Bureau is to see that they get it before 1939.

A better market place is badly needed in Baltimore if truck crops are to be marketed effectively. Present market facilities were built for teams and wagons. They accommodate only 200 trucks, while at peak marketing season, 600 and 700 trucks come to the market daily. Some farmers have spent 12 hours disposing of a load. This condition should not longer be tolerated. The Farm Bureau is cooperating with the Extension Service to secure better facilities and more progress has been made in the past few months than in many years. Much credit for this move must be given to the Anne Arundel County Farm Bureau and County Agent Day.

The Maryland Legislature met twice in the Spring of 1937. During the regular session approximately 992 bills were introduced and 552 passed. A copy of all bills was secured by the state office and each one was checked for its effect on agriculture.

Your representative followed the progress of 74 bills and actively sponsored 17 which were beneficial to agriculture and opposed 11 which were detrimental to farmers interests. The record of farm legislation passed in 1937 speaks for itself with 17 measures sponsored, 16 passed, 11 opposed, 9 defeated and 2 passed with beneficial amendments.

I will not take time to explain the bills but merely name the important ones. A seven page legislative report was made to the directors and can be included in the annual report if it is desired.

The bills or amendments sponsored and passed include the Bang's Appropriation of $100,000 per year, the Japanese Beetle appropriation

of $40,000 per year, the re-enactment of the 1933 act returning the 1½c gas tax to the counties and Baltimore City, two laws to curb poultry stealing, a law to allow the use of convict labor on state and county roads, a state soil conservation act, a state soil erosion act, a bill setting up a state fair board and one to provide revenue for it, a bill to create a state department of drainage, a bill to prevent future diversion of gasoline taxes, and a bill providing a refendum on a constitutional amendment that will legalize a graduated income tax. The amendment will be voted on this fall and every Farm Bureau member should work for its adoption.

We opposed and defeated a bill that reduced the percent of butterfat required in ice-cream, a bill that restricted membership in Maryland cooperatives, a bill that would have taxed cigarettes 2c per package, a bill aimed to standardize auto insurance rates, and finally a proposed bill that would have repealed the refund provision in the gas tax law. Several years ago the Farm Bureau secured this refund provision that returned $600,000 last year and it prevented the loss of this refund in the 1937 session.

Governor Nice called a special session of the Legislature to enact a revenue measure to provide funds for social security and direct relief. The program of luxury commodity taxes plus an income tax was finally adopted. The Farm Bureau has consistantly pushed this tax program, although some new items were added and some of ours dropped.

There was a strong fight made to pass a cigarette tax, and a 6c increase in the state real estate levy. The Farm Bureau opposed these and finally the income tax of ½ of 1% was substituted and passed.

An income tax is finally adopted in Maryland and will be given a chance to prove its fairness and revenue raising ability. The adoption of the constitutional amendment this fall would practically insure a continuation of the income tax. Our object is eventually to eliminate the present state real estate levy of 23c with the revenue from the income tax.

Maryland has cooperated with the American Farm Bureau in its legislative program, supporting such measures as the continuation of the 3½% interest rate on Federal Farm mortgages, the marketing agreement act of 1937 and many others. The American Farm Bureau Federation was successful in its legislative program with 63% of its bills passed, 18.5% of the bills made great progress while only 7.4% of the projects definitely failed.

The request of Maryland to be shifted to the N. E. Region was granted by the A.F.B.F. and Maryland is now a part of the N. E. Region in Farm Bureau activities.

Thirty-one members of the Maryland Bureau attended the annual meeting in Chicago last December. They were a loyal group of boosters and won more recognition than we ever had before.

Harry Nuttle was elected director on the A.F.B.F. Board, Mrs. Weagley was elected secretary of the Associated Women of the A.F.B.F.; Mrs. McGolerick won second place in the National women's speaking contest.

In addition to this, Maryland has made a strong bid for the 1938 A. F. B. F. convention.

These honors were in part a reward for the progress made in the state. Membership is one definite measure of growth and a steady growth indicates that there is activity and service. Today the Maryland Farm Bureau has 4,202 paid up members, an increase of 614 or 18% over last year.

The following figures show four years of progress:

| *Year* | *Members* | *Increase* |
|---|---|---|
| 1933 we had | 2,025 | |
| 1934 we had | 2,458 | 433—20% |
| 1935 we had | 3,315 | 857—34% |
| 1936 we had | 3,588 | 283— 9% |
| 1937 we had | 4,202 | 614—18% |

This year's membership is the largest since 1925 when we had 4,898. In 1938 we should pass this and aim higher. All states set quotas last year and Maryland ranked number 9 among 39 in the per cent of quota secured. One new county was organized in 1937, so today we welcome St. Mary's County into the state organization.

At the business session, a complete financial report will be presented which will show how much progress the organization has made. The policy of the Directors is to use the funds available to develop the organization and build enough reserve to insure against emergencies. During 1937 cash income exceeded disbursements by $932.21 while the assets increased $1,730.58 over those in 1936. The record since 1933 shows a gradual growth.

| | |
|---|---|
| 1933 | $13,139.50 |
| 1934 | 15,940.72 |
| 1935 | 17,179.94 |
| 1936 | 17,515.54 |
| 1937 | 19,246.12 |

As we build our financial strength and add more members, the responsibility of the organization increases. A plan is needed, if our organization is to measure up to the possibilities in the years ahead.

What then should we outline for the future? Any program to be successful must be made by the ones it is to serve and those who are to do the work. It has to be a plan of the people and not of any one individual as so ably stated by Thomas Jefferson more than 100 years ago. The immortal author of our declaration of Independence wrote in his letters—"The way to have good and safe government, is not to trust it all to one; but divide it among the many, distributing to every one the functions he is competent to exercise, to let the National Government be entrusted with the defense of the nation and its foreign and Federal relations; the State Governments with the civil rights, laws, police and administration

of what concerns the State generally; the counties with the local concerns of the counties; and each ward direct the interests within itself."

"It is by dividing and subdividing these republics from the great national one down through all its subordinations, until it ends in the administraton of every man's farm and affairs by himself; by placing under every one what his own eye may superintend, that all will be done for the best."

"Wherever there has been destruction of liberty and rights of men," he declared, "it has been accomplished by concentrating all cares and powers into one body."

Jefferson's statement of policy for the National government also applies to the government of an organization. Every individual has the ability to help his group and each group in turn may assist the next higher in selecting and working out a program of development. The state Farm Bureau has adopted a plan of leaders' study groups which will more fully apply the principles of Jefferson to our organization.

The plan is this: All counties are asked to encourage ten or twelve leaders in each district to start a study club. It is proposed that these groups meet monthly in the homes of members. The program will be one of discussion of questions in which members are interested. There will be no outside speakers and after the first few meetings the club will outline its own questions. Suggested questions will be supplied by the state office.

In November, 90 of our leaders attended a meeting at which study clubs were explained and demonstrated. Late in January, a series of meetings for county leaders will be held after which the county programs may be started. It is recommended to the counties as a democratic way to develop a program. The state office considers it the major project for this year.

There are many problems to discuss; Cooperation, taxation, marketing, farm management, and many special subjects are suggested. In this discussion of cooperation, such questions as the following may be asked; —is the local cooperative serving the farmers satisfactorily? How can farmers improve their cooperative? What services should the state office provide the county units on cooperating purchasing?

County taxes will prove interesting especially in the following cases and others that may be discovered.

The question might be asked—are the farmers paying a part of the cost of government that business property should pay? In Wicomico County farms are assessed at full value, while we are informed that some Salisbury business property is assessed as low as 30% of its value. An increase in the tax base of $1,000,000 means a reduction of 4½c in the county rate. Similar situations exist in Montgomery and other counties.

In Queen Anne's County the state tax commission investigated and discovered that many securities were escaping the tax on intangibles. This activity brought in about $64,000 in back taxes and added approximately $45,000 per year to the county income and the county tax rate was re-

duced from 90c to 80c.

A discussion of these cases would lead to an efficiency and economy committee in each county. This committee would study the continuous assessment plan adopted through the efforts of the Frederick County Farm Bureau.

Marketing is always an interesting subject and such questions as—what cooperative services are available to our farmers? How does the eastern Livestock Marketing Association function? Can it help us? Similar questions could be asked on the Wool Pool, on the Hillsboro-Queen Anne Cooperative, and other established agencies. Out of this discussion will come a better understanding of these services and result in increased support.

Special projects that other counties have undertaken can be considered. Last spring, Harford County bought seed cleaning and treating equipment and during the season treated 12,000 bushels of seed. Calvert County pooled orders on chicks; Somerset pooled orders on fertilizer; Charles County secured the enforcement of the dog law; Washington, Frederick and other counties contacted the WPA and secured partial relief from a farm labor shortage, Baltimore County started the move to secure county appropriations to fight the Japanese Beetle.

In every county there are many worthwhile projects that will be discovered by active, intelligent groups when they gather and discuss their affairs.

There are many questions on production for which neighbors may have an answer. A man familiar with farm management would be very helpful in answering such queries and could point the way to practices that would result in savings. A reduction in production costs is equal to a similar increase in the price of the product. Farm Management also instructs in planning the farm business. We need more of this service and we should ask the University of Maryland to furnish it so that our study groups may have this training which also makes it easier for farmers to understand the principles and to help in the formation of a national program for agriculture.

The soil conservation act has not proven to be a sufficient and complete farm program and Congress is now working on a farm bill to supplement it. Its purpose is to insure parity income for farmers. Its chief features are a continuation of soil conservation payments, parity price payments in place of the present class one, crop loans and marketing quotas for wheat, corn, cotton, tobacco, and rice. The opinion of farm leaders is divided on the methods of enforcing the provisions of this last feature. There is a strong sentiment to help agriculture, so some bill will be passed and we hope that it will prove helpful.

Government programs aid in a general way; farmers receive cash payments and the educational feature is quite beneficial, however they must not depend on these measures alone but use the information gained to build a self-help program. Government aid is only a partial solution, so while it is functioning farmers have an opportunity to work out some

of the more fundamental obstacles in the path toward a more prosperous agriculture. A few of these problems are money or the medium of exchange, distribution methods and the general philosophy of business, labor and agriculture.

Monetary change has already started in a small way and will have to be worked out gradually through legislation. The solution to distribution and the philosophy of scarcity can be begun by the economic action of farmers themselves through cooperation and cooperatives. Industry started limiting production and charging all that the traffic would bear; labor followed with shorter hours and more pay, so agriculture, in self protection, has been forced to seek increased prices by limiting production. Each group is attempting to get more and more returns for less and less production. The ultimate result will be disastrous unless these practices are changed to one of production for the greatest good of all.

I found a clear statement of this situation in the October issue of the National City Bank bulletin.

"Secretary Wallace and the AAA are more apprehensive now than a year ago, fearing that one good crop followed by another may "upset the economic balance." It is urged that the possible injuries, or natural benefits, from abundant crops should be averted by restricting production to prevent prices from declining; but with the hours of urban employment growing shorter and shorter, and the wages higher and higher, it may be necessary to make farm products scarcer and scarcer indefinitely, in order to maintain the balance. Surely there is no alternative to this; *Agreed that balanced* relations must be maintained, why not establish them on a basis of all-around abundance, instead of on a basis of all-around scarcity.

"Since all groups of the system are inter-dependent, it follows that each has as real a concern in the prosperity of the others as in its own. It cannot sell its own product, or maintain its own employment, unless the buying power of the others is as stable as its own. It cannot raise its own compensation at the expense of other groups without losing more by unemployment than it can gain by the nominal increase of its own pay. This is economic law, abundantly demonstrated.

"*Balance,* not Force or Authority, governs economic relations."

We must gradually straighten out these economic relations that have resulted in an unequal distribution of the national income and uncertain conditions which prevent the steady expansion of purchasing power so necessary for a stable prosperity. J. D. Black of Harvard stated that one of our needs was for more production at lower costs. He cited Henry Ford as an example of industrialist who had become wealthy following this policy and then went on to say that if 200 industrialists in this country would practice this policy, many of our difficulties would be remedied. Prof. O. M. Sprague, an economist, Howard Vincent O'Brien, writer, the Brookings Institution (our outstanding economic institute) and many government officials support this theory. Our own coopera-

tive leaders like Harvey Hull of Indiana, Ed. Babcock of New York, and Murray Lincoln of Ohio are back of this method.

These men are convinced that cooperation is the farmer's one means to better his condition. They have seen it demonstrated in Sweden and other European countries. The people of Sweden have used cooperatives to lower costs; to break up monopolies and to build a better system of distribution. Thirty per cent of the retail business in that country is done by the 4,000 cooperative stores. There is no unemployment in Sweden and recent visitors say that it is 25 years ahead of all other countries in business methods and living conditions.

Through cooperatives these three leaders are actually developing a better system for the distribution of products and profits. Those in agriculture have an opportunity to help them build a permanent program. Farmers own 1/6 of the property and receive 1/10 of the income of this nation and possess a latent economic force that can be used to reach this most worthy goal. Farmers are learning to use this power as they progress on the program of self help. Last year $1,200,000,000 worth of farm products were marketed cooperatively. The chain stores have worked with this group to relieve excess supplies of six commodities through their 40,000 stores. A pamphlet published by the chain store association entitled "Practical Farm Relief" is a good one for every farmer to read. As these two great groups work together harmoniously on emergency problems they are developing a respect for one another. This may lead to a very helpful development in the distribution of many farm products in the future.

Time does not permit mention of other instances of cooperative achievement as they develop a better distribution of products and profits which in turn leads to increased consumption and more production.

The Maryland Farm Bureau is a part of two of this country's foremost cooperatives in their respective fields. We have taken an active role in the building of the Farm Bureau Mutual Automobile Insurance Company which is considered the outstanding cooperative insurance company in America. This group has secured 200,000 policyholders and accumulated nearly $6,000,000 in assets since it was formed 11 years ago with $10,000 of Farm Bureau money.

We are also a member as the United Cooperatives, a company that serves its member units in Indiana, Michigan, Ohio, Pennsylvania, New York, New Jersey, Delaware, Virginia and North Carolina. This is the largest wholesale cooperative oil company; it has two large oil blending plants, one in Indianapolis, the other in Warren, Pennsylvania. Other items handled are steel products, paint, sprays, electric equipment, farm machinery, tires and tractors. The members of the United Cooperatives do an annual business of close to$80,000,000.

In the states that these two organizatoins cover jointly, the farmers have many interests in common and they are working together. This is a strong, well balanced development that promises to become the world's greatest farm cooperative. It is now being welded together and will

benefit its members more and more as it gains in power.

Maryland farmers can take as much part in this development as they choose. After a thorough study of the situation, their plan should be made democratically so that the combined judgment of all leaders and groups is reflected. Any plan so conceived and so applied will be a sound one and its success will be assured.

I have pointed out briefly the two parts in our general program—one government aid through legislative effort, the other self-help through our own economic action. The purpose of both is to secure a more stable agriculture based on a prosperous nation. We realize that we can have a prosperous nation only when all our factories, mines, and farms are producing to practical capacity and we urge all groups to cooperate and work toward this goal.

Let us follow the principles of Jefferson in the formation of our Maryland program. In this program we should embody the philosophy of a larger and better distributed income and strive with the full force of our 5,000 members to secure more of this larger abundance for our farmers.

MR. PHILLIPS: I am going to interrupt the regular program again to introduce our former Secretary, Mr. Miles Fairbanks, and ask him to say a few words.

MR. FAIRBANKS: Folks, I have nothing special to say to you except that for me this is an opportunity that two weeks ago I did not expect, although for the past four years I have been hoping to see you. I have never forgotten any of you, and I have looked forward to the time when I could come back and meet with you again, and I have had the greatest pleasure during the last couple of days shaking hands with all the old friends. It looks like old times. There are many new faces here, but I think I see pretty nearly all the old ones. I have listened this morning with a great deal of pleasure and some little pride to the reports which your officers have made, and I realize this work in which we all here had some little part some years ago is going on to bigger and better things.

I would like you to amend your Constitution to take in Puerto Rico as part of the Maryland Farm Bureau so I can pay my membership fee and get on the Board, and then you could all come to San Juan and I would show you a real good time. You know Puerto Rico is a part of this country, and it is not so very far away. If you want to fly it is only eighteen hours away, but after reading the newspapers this morning I am afraid many of you would not want to fly. It is only four days by one line of steamers, and you could do all your working on shipboard, and hold the Convention down there, and have three days to recover on the way back.

I know you have a big program before you, and I am going to enjoy listening to all of it. I do wish I had time to tell you something of Puerto Rico, I think you would enjoy hearing about it, but that will have to wait.

MR. NUTTLE: Tell them about that plow.

MR. FAIRBANKS: I want to be serious for just a moment, and really urge you to come down, if not for a Convention, then come as individuals. We hear of farmers traveling to Alaska and Mexico, and other places, and you all remember our trip to the World's Fair in Chicago some years ago. It would be a fine thing for some of you to get together and get some special rates from the Steamship Company and come down. We don't have a Farm Bureau there, we do have a Farmers' Association, just about like the old Maryland Agricultural Society, but someday we are going to organize that into something approaching your organization. Our Farmers' Association down there does pretty much what you are working on up here. We have started several cooperatives. Coffee and sugar are our great crops. Part of our reconstruction program is a cooperative sugar mill,—sugar is our big crop down there. You will be interested to know the original capitalization of $3,500,000 made a net profit of $250,000 in our first year's operation. We do not have the biggest sugar mill on the islands nor the smallset. To give you some idea of our agriculture, this property has been organized into nine cooperatives, and it covers about 15,000 acres. We employ 4,000 laborers during cutting and grinding time. That plow Harry wants me to tell you about cost $30,000. It is a combined tractor and plow. We have to dig 36 inches deep when we plow for sugar. We do not have time to move it from one field to another. We would almost have to take it to pieces. I would not advise you to buy one like it until we try it out some more.

All our field work is done with oxen. At our Centrale we have 2,000 working oxen. Puerto Rico is a country with some of the most modern methods and at the same time many of our people live pretty much as they did 200 or 300 years ago. It is very charming, very interesting, and a very nice group of farm leaders to work with. We have a branch of the Farm Credit Administration there, a bank for cooperatives. We have an emergency loan office there. I would like to tell you about those three.

There is one thing more I would like to tell you. You probably do not realize that the island is only about the size of the Eastern Shore of Maryland, it is very densely populated, averaging about 500 per square mile, and little Puerto Rico is the second largest customer of the United States in all of Latin America, and the sixth largest customer in the whole world. Our land is so densely populated that we cannot afford to raise farm produce on the land, and we have to import most of that food. We have to raise more rapidly growing crops. It does not pay to use the land for farm produce, it is cheaper to import it. Some people think the Federal Government has been spending lots of money in Puerto Rico and they object to that, but out of every dollar that has been spent,—and recently Puerto Rico has not received any special appropriation,—it only received its proportionate share of the Work Relief money which was appropriated by Congress for distribution, and out of every dollar 76 cents comes back to the United States. The or-

ganization that I work with also purchased as a part of our building program over $7,000,000 worth of building materials in the United States during the past two years. So, even though you may send money down there, you get it back.

Again I am going to say I am proud and glad to be here, and I hope I can come back again next year.

MR. PHILLIPS: Our next speaker is Mr. Zach Turner, State Agent, who will speak on "Insurance Accomplishments in 1937."

## INSURANCE ACCOMPLISHMENTS OF 1937

### By ZACH TURNER, State Agent

Mr. Chairman, ladies and fellow workers: This makes the ninth gathering of the cooperative agents in conjunction with the Annual Meeting of the Maryland Farm Bureau. I was allotted only ten minutes. Therefore, I am reading my talk to give you as much as possible in this short time.

There are approximately 60 insurance men and their wives from Maryland, Delaware and the District of Columbia. I am mighty proud of this representation. It shows their interest in the work and their desire to have a broader knowledge of the accomplishments of their sponsoring organization. If we are to be successful in the cooperative field, we must have a general idea of the entire program. I hope the insurance representatives will have a different outlook on the motives and objects of the Farm Bureau, and will be able to tell the story more forcefully when talking to their prospects back home. I want to thank the insurance agents for their splendid cooperation which they gave during 1937, not only in sending in a large number of applications, but also the manner in which they selected their risks. This is a mighty important duty, as our rates are determined by the number of accidents we have. Therefore, it becomes the duty of each of us to report to the home office any undesirable risk we might know about.

The Maryland Farm Bureau and its County units, also the affiliated organizations throughout the state, have cooperated 100 per cent with the insurance program.

During 1937 there were 8,320 farmers and business men in Maryland who placed their automobile insurance in the Farm Bureau Mutual Auto Insurance Co., and at the same time have saved at least 25 per cent of the cost of their insurance. Another way to look at this is; there are 8,320 people who know something about cooperation. I venture to say if one would contact these individuals and ask where they carried their automobile insurance, in 99 per cent of the cases they would say Farm Bureau Mutual Auto Insurance Co. On the other hand, if you would contact a like number of people who purchased insurance elsewhere, and ask the same question, in 99 per cent of the cases they would not tell you the name of the company but the name of the agent or broker. This shows to me how well these people are being sold on cooperation.

Today there are over 17,000 policyholders in Maryland and we actually made a net gain of 6,000 coverages in Maryland for the year. For the benefit of those who are here from Delaware or the District of Columbia—Delaware policies in force over 1,500, net gain over 1,000 coverages. We have just recently been licensed in the District of Columbia and there are 769 coverages in force.

Our rates are based upon the loss expense, and those losses depend upon the action of our policyholders. There are five ways to keep insurance rates down:

1. Most important of all, keep yourself ever on the alert, conscious of safety first, *every time you take the wheel, every mile you drive.* Do this and you'll be able to avoid many situations that could lead to serious damage costs and suffering.
2. Keep your car in good "safe" mechanical condition through *regular* timed inspection of its steering wheel, brakes, lights, etc.
3. See to it that others who drive your car are properly advised regarding highway safety methods, alert and courteous driving, and that they become as interested as yourself in efforts to promote careful "accident free" driving. Also, throw your influence and efforts back of a sound safety program in your community. It's a fine thing to do.
4. Report "good risks"—give the names of people whom you judge to be good, safe drivers, and who should have Farm Bureau insurance—to your agent (or send the name direct to our office).
5. Report "bad risks" who have taken Farm Bureau insurance—*they are the ones who increase insurance rates!* Your name will be kept *absolutely* confidential. Do this at once. They will be investigated immediately.

Your Automobile Company

| | |
|---|---|
| Assets | $5,500,000 |
| Surplus | 1,300,000 |
| Polices in force | 200,000 |

Fire Property Insurance

Over $60,000,000 in force in Ohio alone and serving over 20,000 farmers and business men.

Your Life Insurance Company was introduced in Maryland in 1936, and so far has done a mighty fine job, and the people of Maryland have taken advantage of the new service.

No one likes to think about this service. Life insurance is like a parachute. If you need it and don't have it you will never need it again.

Your company operates in six states namely, Maryland, Delaware, Ohio, West Virginia, Vermont, Pennsylvania, with over $20,000,000 of Life Insurance in force and over $2,000,000 assets. During 1937, $6,000,000 of Life Insurance was written in the six states. Maryland produced over 300 Life applications amounting to over $587,160 or just a little better than half a million. Delaware produced $86,910. This shows the confidence the people have in their organization.

Our personnel staff consists of 1 state agent, 3 field supervisors, 17 district managers and 128 local agents. We have written 8,320 automobile coverages, with a net gain of over 6,000 coverages; $587,160 Life Insurance with 300 life applications. Next year, with a better knowledge of insurance and what it will do for mankind, we are setting our goal for 9,000 auto coverages and one and a half million dollars of Life Insurance.

I am taking for granted that you are all members of the Farm Bureau or interested in the movement, otherwise you would not be present. If you know of anyone who is a good prospect for insurance or who might be interested in representing us, write to or phone the state office at North Avenue and Charles Street.

Again I want to thank the Maryland Farm Bureau, agents of Maryland, Delaware and the District of Columbia for their splendid cooperation during 1937. During the years that are to follow let's all work closer together; then all will profit to a larger degree.

MR. PHILLIPS: Our next speaker is Mr. F. L. Miles, of the Eastern Livestock Marketing Association, who will tell us of the "Progress in Cooperative Live Stock Marketing During 1937".

MR. MILES: I would like to say it gives me a lot of pleasure to bring greetings from our Board of Directors to the Maryland Farm Bureau.

## PROGRESS IN COOPERATIVE LIVESTOCK MARKETING

By F. L. MILES

Eastern Livestock Cooperative Marketing Association

Cooperative livestock marketing in the United States in 1937 has made marked progress, with farmer owned and controlled agencies selling a greater percentage of all livestock received at terminal markets in 1937 than in any other year.

Your own farmer owned and controlled livestock selling agency, the Eastern Livestock Cooperative Marketing Association, is a member of the National Livestock Marketing Association, which has member agencies operating on practically all terminal markets from the Atlantic to the Pacific, Canada to Mexico. Your Eastern has agencies at the three most eastern markets, Baltimore, Md., Lancaster, Pa., and Jersey City, N. J. The National Livestock Marketing Association stands in the same relation to each member agency as the American Farm Bureau is to your State Farm Bureau. They are also working hand in hand with the American Farm Bureau on many national agricultural problems.

To bring the results of cooperative livestock marketing closer home, the Eastern was organized through the cooperative efforts of livestock producers in Maryland, Virginia, West Virginia, Tennessee, Pennsylvania, North Carolina and New York. Each of these States has raised some money through farm organizations and individual farmers to finance the Eastern and own all of the common and preferred stock in the

organization. The common stock is the voting stock. Maryland has two Directors on the Board of Directors of the Eastern, your prominent and enthusiastic Farm Bureau workers and leaders, Sy Jones and Charley Cockey.

Our volume has always come largely from the two Virginias and Pennsylvania. We have always felt that Maryland Livestock producers should have contributed more of their livestock than they have. Last year in cooperation with the State Farm Bureau and county Farm Bureaus we held a number of meetings in several counties, at which we had a fair attendance and found a fair response to our talks on cooperative marketing. Meetings of this type should be held in every county in the State every year.

As to the volume of the Eastern in 1937, we show an increase in cattle, hogs and lambs over 1936. In Maryland we have an increase of 20.8% in cattle, 80.1% in calves, 46.1% in hogs and 15.5% in sheep. This increase is largely due to the splendid cooperation of various county organizations. The Counties showing a nice increase in volume were: Baltimore in calves and hogs; Carroll in calves, hogs and lambs; Howard in calves and hogs; Montgomery in calves, hogs and lambs; Prince Georges in hogs; Queen Annes in cattle and Talbot in all species.

Has the Eastern rendered a service to the livestock producers? Without any reservations I can say *yes*. We have been a vital factor in assisting in stabilization of the local market, and with greater volume can do more. The Farm Bureau members by giving unified and whole-hearted support can place their organization in a more favorable position than it now holds.

How can the work be carried out with the cooperation of producers, Farm Bureau and the Eastern? In many of the counties we now have gone far enough to be thinking towards a real educational program in marketing. For one of our salesmen to visit your farm and to say that your steers will bring seven cents per pound is not furnishing you any real, long-time market information. It is true that this kind of service is helpful, and we are glad to render it at the time your cattle are ready to move, but why have you seven cent cattle? What kind of cattle should you feed for late winter or spring market? Should you have heavy or light cattle, good feeders or medium? What kind are you going to buy this spring or next fall? Will your cattle be ready to market in July or November? Do you have a livestock feeding program on your farm or do you buy your cattle in October because your neighbor buys in October? The same questions can be asked about any other species of livestock. Do you just keep your livestock and sell it, or do you feed livestock and market it?

Is your County ready to take the step forward and study feeding and marketing of livestock? If so, we of the eastern Livestock are ready to assist. What should you do to get ready to start? First have a group of interested livestock producers meet in your County and make a survey of who produces livestock, what they have, what market they are feed-

ing for, when and where they secure their livestock to feed. Study outlook reports on the kind of livestock they have to market, learn to read these reports and fit them into your needs. This is important. Plan on some county tours, study how your neighbor feeds his livestock, see where you can improve over his practice. Learn to know the different market grades of livestock. When you read a Market News Report and see certain grades of livestock quoted as selling for a stated amount, do you know where the livestock you are feeding fits into this report? Do you know why some cattle feeders can make steers yield 60% and others only 56%, yet both lots of cattle were the same grade to start with and fed the same length of time? There is a good reason.

Why not put your livestock producers to work in an organized way? Are you ready to market your livestock or will you keep on just selling?

MR. PHILLIPS: Our next speaker we are very proud of here in Maryland. Her husband said in Chicago she was so popular that he hardly saw her except for a few hours at night. I am very proud to present at this time Mrs. R. C. F. Weagley, who was recently elected Secretary of the Associated Women of the American Farm Bureau Federation.

## OUR HOME AND COMMUNITY PROGRAM FOR 1937-38

MRS. R. C. F. WEAGLEY
Home and Community Chairman

Considering the late start with which the morning session began and the injection of great interest to all, I think our Chairman deserves a medal for keeping the morning program running so nearly on time. I know we are not like the salesman who had been traveling on a certain railroad for a number of years and was complaining about the trains always being late, when, to his surprise, the train came in on time. So he rushed up to the conductor and said, "Here's a medal. I want to congratulate you. I've traveled on this road for fifteen years and this is the first time I ever caught a train on time." The conductor said, "Keep your medal; this is yesterday's train." I know we have actual proof that this is not yesterday's program.

I have been requested to talk about our 1937-38 Program which, I think, could be condensed into the four words: Education, Organization, Cooperation, and Recreation.

I mention education first, because our first responsibility as women of the Farm Bureau is to help carry on a program of education that will materially assist in building our local Farm Bureau. One thing to be remembered, however, is that in order to build Farm Bureau we must, first of all, believe in Farm Bureau.

The farmer must know about and believe in the advantages of farm organization before he will become a member, and the farmer's wife must know about and believe in the advantages of farm organization before the farmer will become a loyal member.

Therefore, it is our duty to study, gather and distribute information on every phase of agriculture. It has been said that the three ways of spreading information are: telephone, telegraph and tell a woman; so, when holding your next county directors' meeting have your Home and Community Chairman present and see how much more quickly you get the Farm Bureau story across, regardless of the fact that husbands are considered professional story-tellers, because when little Mary called her mother at 2 o'clock in the morning and asked her to tell a story, the mother said, "Never mind, Mary, daddy will soon be home and he will tell us both a story."

Another way to acquaint people with the facts is in discussion, where a question may be asked by any indviidual and then be discussed from all angles. You know, if questions are asked by women, only, it may be considered curiosity, while if men ask the same questions it probably will be called research. However, there is something stimulating about discusson. It is a progressive education. It is a movement which deserves to be encouraged by both men and women, and the only way we can hope to develop it is through the participation of each and every one of us. This sort of education made of the Danish peasant one of the most intelligent individuals in the world. And it requires individual intelligence to make strong group action.

Then, there is the field of Youth; our boys and girls must be taught to love the soil. They must be made to realize that the things which they possess are the things that count most. We must give our support to any rural youth movement that is conducive to training them for their place in organized agriculture.

It is impossible to think of youth and not consider the matter of health in rural America. The Associated Women of the A.F.B.F. set some health goals for 1937 and sponsored the Public Speaking contest on the subject, "Health for Rural America" which brought alarming information to thousands of farm women. The Associated Women have declared a willingness to cooperate with recognized public health agencies in the pursuit of positive health standards, rural and urban; and are continuing their support of the Children's Bureau of the United States, asking for additional appropriations needed for carrying on adequate service in maternal and child health work.

A meeting of the Children's Bureau is called for January 17 and 18, in Washington, D. C., where I am expected to be one of the representatives of the Associated Women of the A.F.B.F.

The program of the Associated Women, in working for World Peace, is primarily a program of training for world citizenship, which implies, first of all, the increasing realization that all the peoples of this earth are dependent upon one another. Our effort to promote study of all factors leading to the promotion of peace is very timely. Valuable information can be secured from the Carnegie Endowment for International Peace. This probably sounds too serious to command the interest of some people, but, if we really want peace, we will spend some time in thought and

study, which reminds me of the African boy who walked ten miles to church, where he was asked by a white man if his feet didn't get tired walking so far; the boy said, "No, Massa, where the heart wants to go, these feet never get tired."

We are rapidly learning that with understanding, prejudices disappear. Therefore, it is essential that the rural people become acquainted with the people in neighboring towns, and each learn to know the other's problems and to seek a satisfactory solution. The farm women, who are both producers and consumers, will naturally seek a solution that is fair to both the producer and consumer.

Organization and Cooperation go hand in hand, when there is continuous education. It requires cooperation to build the organization, which is the machinery through which farmers may do things for themselves in a cooperative way. When farmers are convinced that we, as farm people are faced with one great opportunity—that of being organized, first for protection and then for power and influence in legislation; and that, as the organization grows in membership, its influence will become greater and, as its power increases, through experience and additional strength of membership, its value to the farmer will grow correspondingly, then they are ready to cooperate.

It is about time for the American people to recognize the fact that no individual farmer will ever march to victory alone. He must march with his neighbors in his local community. A boy was once asked if he were afraid to hunt grizzly bears with a club; the boy answered, "Not if there are enough members in the Club." You see, the boy was group-minded. And I believe that when we are willing to think together and act together we may easily enter into this new age, which is the power age plus the distributive justice of a real and sensible cooperative industry. But, we must have sound reasoning, acquired through study and experience, coupled with an understanding of the problems to be solved. Production may be an individual job, but distribution and marketing are cooperative jobs. And the finest thing about the cooperative is that one cannot work for self without at the same time benefitting his neighbors.

The service motive is the controlling force back of the Farm Bureau. It says to all farmers, without discrimination, come and join with us to make the farm an economic unit capable of supporting a family with an American standard of living.

The greatest service Farm Bureau can render a member is to get that member to participate—to get him working, for we are convinced that agricultural progress must come through the organized efforts of farmers themselves.

Dr. William Dennis, of the Pennsylvania State College, said that cooperation is an art, and gave the following steps as being essential for the development of that art: "Coming together is a beginning, Keeping together is progress, Working together is success, Thinking together is victory."

Recreation may not always seem to have a significance to the economic and business side of the Farm Bureau Program, but its social and educational values cannot be overestimated.

Most of the sociability and companionship of life comes in our leisure and recreational period. We cannot play with people without becoming better friends and neighbors. The community feeling is strengthened and a loyalty to country life is developed through recreation, which is intended for rest and rebuilding of wearied spirit, nerves and muscles. It may take any form that is lacking in seriousness and has value in refreshing the mind and body for the more serious work of life.

The program of recreation for a community depends upon the local talent available and the enthusiasm with which this talent is shared. List all the talent you can find in the community, singers, people who play musical instruments, dramatic groups, those who know national dances and folk songs, people who can give interesting talks on literature, art, travel, hobbies and nature studies. Games may be played or motion pictures shown. Various types of holiday programs may be carried out.

We should sing our National Anthem, our State Song and Farm Bureau Song.

Participating in the Public Speaking contest is not only educational but proves to be a recreation to many farm women. The subject for 1938 is "Better Schools for Rural America", and if Maryland can continue to win second place in the National contest every second year we will be, indeed, fortunate.

There is another feature of recreation in which the women can shine and that is the planned social period with refreshments near the close of each local meeting. Nothing serves more adequately in binding together the people of a community than eating together. And people will want to come again if the meeting has a pleasant ending. The success of a meeting lies all the way between a prompt beginning and a pleasant ending.

In summary, let our 1938 aim be: A Home and Community chairman in every county; a Home and Community worker in each county Farm Bureau district; enough local meetings to keep the members informed; recreation and social period in every local meeting; all non-members contacted and told about Farm Bureau activities; cooperation with Extension leaders and Vocational directors in youth guidance; better health standards; development of cooperatives; expansion of Farm Bureau Insurance; safety campaigns; legislation for agriculture; publicity in county newspapers; cooperation with consumer groups; and the study of World Peace.

MR. PHILLIPS: We in Maryland are very proud of the next speaker. To think that when she entered that contest she was among 1,200 other women, and that she won the second place. We will now hear from Mrs. McGolerick, winner of the second place in the National Speaking Contest.

## HEALTH FOR RURAL AMERICA

By Mrs. Mary B. McGolerick, New Market, Maryland

A "back to the farm" movement has been suggested by various popular agencies. However, from the public health point of view, it is undesirable to urge people to move to the country until more progress is achieved in remedying the present unfortunate health conditions in rural districts.

The careful student of health progress in the United States today is early impressed with the great contrast between the sanitary conditions in country districts and those in the cities. Recent years have witnessed great progress in the cities. Effective health departments have been organized, and the effect of measures, such as the supervision of water and milk supplies, and visiting nurse, and the tuberculosis dispensary, medical inspection of schools, and the accurate control of contagious diseases, has been so pronounced as to place their work on a firm basis, and to insure its continuance and extension.

While these facts are true of the cities, in many states no such condition exists in the country districts. They remain as they have been for years, with inefficient organization, some even depending on the methods and beliefs of 30 years ago. In only a few states is there adequate supervision of the rural communities. The vast contributions of modern science to the prevention of disease are for the most part lost to the people of the country for the lack of organization and education.

The reasons for this contrast are, in the main, perfectly obvious. In the first place, the very isolation of the country makes it almost impossible in the circumstances to educate the country people in the importance of health measures. A single successful campaign against measles or diptheria or impure milk will generally convince the people of the city of the importance of health measures. As such a campaign is difficult or impossible under present conditions in the country, education comes more slowly and the support of health measures is always more doubtful. In the second place, the contrast between country and city is largely due to the fact that Health measures are more obviously necessary in the city than in the country.

The crowded city demands health protection. Where our nearest neighbor lives half a mile away he may suffer from a wide variety of diseases and we may never feel the danger, but where we are separated from contagious disease only by the partition wall of an apartment house, we feel the necessity for and yield more readliy to preventive measures.

The explanation for this contrast, however, is not its justification. The country no less than the city needs health education. The country, even more than the city, stands in need of fundamental health precautions. The very mass of disease in the country districts of itself requires that this problem be attacked, but the bearing of rural sanitation on the

health of our cities is perhaps a still more immediate reason why our point of attack should be shifted. The health of the city depends in a large measure on the health of the country. Practically all the food products of the city come from more or less remote country districts. In the same way close intercourse between cities and country renders the former particularly liable to infection from the latter.

In addition to the crying need for such work rural conditions offer to the scientific sanitarian the attraction of almost unparalleled opportunities for research work in the transmission of disease.

The farm is the point of attack. Each farm is, to all intents and purposes, a separate community, with its own population, its own problems of sanitation, and its own forces for good and evil. The work we would do for the improvement of rural conditions of health must be done for the improvement of the farm.

Studies of sanitary conditions on farms show facts that are almost unbelievable in the light of our knowledge regarding soil pollution. The soil presents many possibilities for man's good as well as for his harm, and some of these possibilities are well worthy of consideration.

Where the soil is very retentive of water, it is apt to be damp and cold, and inasmuch as the soil influences atmospheric temperature, the atmosphere above such soil will also be damp and cold. Regions with cold, damp atmospheres are quite apt to conduce rheumatism, respiratory diseases, and are, therefore, apt to be known as unhealthful regions in which to live.

The typhoid, cholera, and dysentery organisms, in regions where human feces are used for soil-fertilizing purposes, may in rare instances cling to vegetables grown in that soil. Such vegetables, if eaten raw or served in salad, may convey disease.

The soil in many regions has been found to be deficient in iodine and inasmuch as iodine is a soluble compound, the soil water and the plants grown in that soil are also found to be deficient in iodine. It is believed by most public health workers that a deficiency in iodine in our food and water supply during the growth period frequently results in an enlargement of the thyroid gland—commonly known as goiter. Likewise, Rex Beach in his article "Health From the Ground Up", (Reader's Digest, January, 1937), points out that by replenishing the soil's supply of healthful minerals, more healthful food products will be produced.

Wells are often carelessly dug, carelessly protected, if protected at all, and carelessly kept. The well tops, almost without exceptions show wide cracks through which filth is washed at all times into the well; the buckets are handled by all kinds of hands and then carefully lowered into the well for the only cleaning they ever get. The personal habits of the average inhabitant of a rural district are of a character in keeping with the other sanitary conditions The absence of running water, and particularly hot water, make effectual cleanliness, especially in cold weather, difficult, and the amount of water used per capita per day is exceedingly small.

It must, of course, be admitted that in every rural Community there are those of sufficient intelligence, self-respect, and ability to rise above these conditions and to provide themselves with modern sanitary conveniences, but, particularly in regions where the economic standard of rural life is low, these exceptions are few.

Apparently while our rural dwellers are continuing to trust to nature to keep them free from disease and defects, our urban dwellers are quite generally realizing that in modern civilization nature is hopelessly handicapped and are putting their reliance more and more upon sanitary engineering, preventive medicine, and health education—and with results that are definite.

There would thus seem to be need for some scheme of rural health organization and medical service which will make available to our rural population something of the same health protection which the urban group is now receiving. Such a scheme to be practical must however be based upon the recognition of the great distances so often between the scattered rural families and upon the limited ability of the average rural community to meet the expense of organized health work.

Such a scheme has been in the course of evolution in this country. In brief, it is the organization of each rural county or other suitable district as the primary health-administrative unit with its physical headquarters at a health center strategically located near the center of the county. In charge of the county health unit is a full-time health officer with his staff of public health nurses, sanitary adviser, school physician, and laboratory directors, replacing the five to twenty part-time township and village health officers of the old regime. In the days before concrete roads and automobiles the division of the average county into many small administrative units with an autonomous Board of Health and officer was justified. In these days, however the distances from one point to another in the average county are no longer prohibitive and the consolidation of the health-administrative units into the county health unit has been found to provide a district not too large to administer from a central point, yet large enough to justify and provide for the adequate maintenance of a full-time public health service with headquarters at the county health center.

When the health-center idea has been combined with the county-health unit idea, the functions of the center have often been considerably broadened and increased. Thus, in a rural county health unit the functions of the health center are often as follows: to act as the headquarters for the organized public health agencies both official and voluntary; to provide hospital beds, nursing, laboratory, and X-ray facilities for county patients; to provide tuberculosis, child-welfare, venereal-disease, and mental-hygiene clinics for county patients; to act as a registry and clearing-house for information concerning medical, nursing, and hospital facilities in the community; to act as a health-educational center for the community; to provide health exhibits, health lectures, health literature, and classes in home nursing, prenatal care and first aid.

Thus, with a full-time county health organization developed efficiently yet on a modest scale, with a health center strategically located and wisely planned, and with the county roads improved and kept clear of snow in the winter, the provision of a rural county with modern public health service does not appear to be at all impossible. Where county health work is subsidized by state funds the economic problem is even less dffiicult.

Another solution might lie in the health insurance bill which is discussed in the January 30, 1937, issue of The Literary Digest. If such a bill were to be passed there could not be any discrimination as to the distribution of its benefits and thus the rural districts would receive their full quota of medical attention.

Improvement in the health service and health teaching carried on in our rural schools is most urgent. Some slight improvement can be hoped for through the better training of our teachers and rural superintendents, but big improvement will most likely come through the consolidation of the smaller school districts into larger ones and the development of the county health unit and a six-point modern public health program (sanitation, communicable-disease control, child hygiene, vital statistics, laboratory service, and health education) in our rural areas.

A wonderful poportunity is at present available to all who are interested in rural health problems to demonstrate what can now be accomplished by the practical application of the new principles of sanitary science and the efficient administration and support of those agencies which will bring adequate medical and nursing care into every rural home.

Let everyone be constantly imbued with the idea that honest public health effort is never futile and ultimately will achieve worthwhile results.

MR. PHILLIPS: Our next speaker we were fortunate to have down at our banquet last February in the High School in Wicomico. He drove down there on one of the worst nights in a blniding snow storm. That is the way he is always doing something for the benefit of the farmers in Maryland. He was nearly exhausted when he got there. It is my pleasure at this time to introduce to you Dr. T. B. Symons, Acting Dean of the College of Agriculture, of the University of Maryland, who will speak on "Maryland and the National Agricultural Program."

## MARYLAND AND THE NATIONAL AGRICULTURAL PROGRAM

By DR. T. B. SYMONS, Acting Dean,
College of Agriculture, University of Maryland

Mr. Chairman and friends, the program is advanced to the period for lunch, and you have had a very wonderful program so far. I am reminded of a story they tell of an Englishman and a Frnechman when I say I do not like to encroach on your lunch hour. The Frenchman was

learning to speak English and he remarked to the Englishman in connection with the time of a certain event,—"Well, I do not want to cockroach on your time." The Englishman said to the Frenchman: "Friend, don't you know you are using the wrong term? You do not 'cockroach' upon our time, you should say 'hencroach 'on our time." The Frenchman says "Well, it is just the gender that is wrong."

Then, I am reminded of another story that I cannot resist, although time is passing. We have in this audience here today,—shall I say a distinguished gentleman, a war horse of Southern Maryland? He has by his side a very beautiful young lady, and I am reminded of a story when I speak of Mr. Parran and his little girl. At one time a father and his little girl were standing in front of a mirror, and the little girl said "Daddy, who made me?" The father said after thinking a minute "God made you, honey." She looked in the mirror again, and she said, "Well, Daddy, who made you?" He thought a minute or two and he said "Why, God made me, honey." She said "Well, God is doing better work these days than He used to do."

I want to say, my friends, on behalf of the Extension Service and all of the University, that we want to express our appreciation for the very fine cooperation the Farm Bureau organization has given throughout the year in carrying out our work. We are only at the beginning of the development in farm organization in Maryland. I hope, while we have made fine progress during the past year of which this grand Convention is a result, that each and every one of us will resolve that we will endeavor to tap the souls of many farmers in Maryland who have not as yet appreciated what farm organization can bring to them. I want to congratulate all upon the fine show down on the mezzanine floor. I hope you will all examine that.

I was talking with a man this morning and congratulating him on his exhibits of corn. He said "Well, I brought down 135 ears of corn and 134 of them are in the money". I hope you will see some of these splendid examples; also the exhibit of eggs and apples, and the wonderful exhibit of tobacco. It is a quality exhibit.

I want to say on behalf of the Agricultural Associations, we are indebted to the State Fair Board for its splendid cooperation. It has been most helpful to all concerned.

I am down for discussion of the National Agricultural Programs, but I want to pay a tribute to the members who I am trying to visualize in your minds. They have done such a fine job in the State. I want to speak of Mr. Oswlad and Mr. Nystrom, and Mr. O. C. Bruce, who has helped so much in the matter of soil erosion program. I had hoped to have each of those men say a word to you. We will have to do our best in the few minutes we have.

I want to leave two thoughts with this fine group of farmers. We all want to cooperate with the farmers of the nation in a constructive program for agriculture; and second, the need for the adaptation of these national programs to organizations in the Counties, depending upon

the character of their agricultural exhibits. One of the greatest problems that we have in an administration of this kind is to try to get this program adapted to the conditions, the needs of the Maryland farmers, and it was with this thought that I had prepared with the help of my associates some charts to show you our condition in relation to the national program as well as our geographical position in relation to other States, and so I am going to hastily pass through these charts. I will just give you a brief resume.

You see we did not reach the highest in 1918 nor the lowest point in 1931. This red line represents the income of the Maryland farmers. I won't go into that, but you know the difference between the income that the farmer receives and the price that we have to pay for our goods, and the income that other groups receive. It is a perfectly apparent problem and all of us are working to have better ratio between those two.

Now, I want you to observe,—just to consider the regions of the country, the income that farmers receive,—we will take Iowa and Maryland so that you can see a decided difference in the character of our respective agriculture. You will notice:

| | *Iowa* | *Maryland* |
|---|---|---|
| Corn | 9.5 | 2.7 |
| Wheat | .6 | 7.7 |
| Small grains | 2.3 | .5 |
| Hay and feeds | 1. | .2 |
| Tobacco | | 8.7 |
| Trucking crops | .5 | 14.5 |
| Cattle and calves | 21.6 | 4.8 |
| Hogs | 35.2 | 2.1 |
| Dairy produce | 15.2 | 29.4 |
| Chickens and eggs | 11.0 | 14.3 |
| Miscellaneous | 1.7 | .9 |

This will tend to show that our agriculture is planned around different phases of return to the farmers than the agriculture of Iowa which we generally know. You will notice that trucking crops in Maryland are 14.5, and dairy products 29.4, and poultry 14.3, a large share of our income. Naturally, any program for the benefit of our farmers must take those factors into consideration.

Then, in passing, there is something that we cannot always appreciate. Our agriculture, my friends, must always be arranged to take into consideration the production of food for human consumption. We are geographically located in the most favored spot of the world. Within 200 miles of this State there are our largest centers of population, so that we have more than 28,000,000 people who are the consumers for Maryland produce. We must remember that we are right in the center of human consumption, and our production, our agriculture must be so arranged to best furnish a market through those centers. We are at the very approach also to the South.

In going through the agricultural set-up, we have a National program, which helps our farmers in bringing them a little additional income. This chart shows the income of the Maryland farmer from 1924, and how it has varied. Here it is in high at $82,000,000 in 1929, and then it took a drop down to $40,000,000 in 1932. Then, the program in 1933 began to raise it some, and here you will notice going from 1933 to 1936, gradually a larger income. For 1937 we have not the figures available.

Here is represented in dollars and cents what Maryland received from the National Program. We have received over these years $5,564,000, about one and a half million a year distributed to the farmers in Maryland over that period of time,—1933 to 1936.

Here is a chart representing the cooperation of the Maryland farmers in the present 1937 program,—18,000 farmers are now cooperating in the soil conservation program. I think that represents a very splendid spirit of cooperation. Here it shows the cooperation of the farmers in the community with the Government through your State Committee in the soil erosion program.

I cannot go into the present farm program, as our time is just about up, but I do want to enumerate what I believe is the thought of the farmers of this State; that we can all agree on the following ten points:

1. *A fair share of the national income for agrciulture.* We can all agree on that.

2. *Conservation of National resources.* That is the reason that everybody believes in the soil erosion program which will be considered in the 1938 program. We all agree on that.

3. *An adequate surplus of food and fibre for the consumer.* There is no farmer who does not want to see an adequate surplus of food and fibre for the consumer, and they do want a fair price.

4. *The maintenance and re-opening of export markets for farm produce.* We all realize that is necessary.

5. *The encouragement of a family-sized farm.* We in Maryland have an average sized farm of 125 to 150 acres,—100 is probably the average. We all know the importance to the nation of this.

6. *Security of tenants.* That is a real problem that this organization must consider; 25% of our farms are run by tenants.

7. *Better land use.* We are very much in need of that.

8. *Increased farm efficiency.*

9. *Improvement of our marketing and distribution system.*

10. *An adequate credit for farmers.* That is essential for the success of the whole program.

And now I am going to ask the State Committee to stand,—Mr. Harry Nuttle, Chairman, Mr. Roy Brookes, Mr. Sam Linton, of Charles County; Mr. Burall of Frederick County; Mr. Downey, of Washington County; and Mr. J. W. Jones of Montgomery. (The gentlemen named all stood).

I was going to ask Mr. Nystrom to stand but I do not see him. He has been doing splendid work. Also, Mr. Oswald.

We have a splendid set-up in Maryland, and I want to again thank you for your cooperation.

Meeting adjourned 12.15.

## AFTERNOON SESSION, JANUARY 13

Mr. W. R. C. Connick presiding called meeting to order 1.45 P.M.

MR. CONNICK: Ladies and Gentlemen, I don't believe that the gentleman who is in charge of our singing has been properly introduced to this group. He is the man who is responsible for the enormous amount of sleep that was lost by the Maryland delegation on its trip to Chicago and back. In addition to his great ability as a song leader he has a remarkable talent for entertaining the fair sex,—indeed, that is his specialty. He has the most taking way with the ladies of any man I ever saw. I am afraid there is an aching void in the hearts of many of the fair ladies in Chicago because of his absence. He comes from down in Dorchester County on the Eastern Shore, but you must not hold that against Dorchester County. They tell me he is the only man of his kind there. For the next few minutes we are going to have some songs.

MR. MCKNIGHT: I appreciate the kind words you have said, Mr. Chairman. I also want to tell you ladies I would like to ask this question,—how many in this audience now went to Chicago,—please rise.

Now I want the rest of you to look at the intelligence of this group and I want to publicly thank that group for sending me so many babies. It seems on the trip back from Chicago, being a family man with several children, I had in my possession a doll baby, but some of the members of the group liked that baby better than I did and it disappeared. I objected, and something I said seemed to hurt, for I have received since then thirty-three babies.

Mr. Connick is rather modest. We are now going to sing a song to a tune which maybe some of you folks know. Mr. Connick wrote these verses because we were trying to get the National Convention to come to Baltimore next year.

The land of terrapin and duck
Maryland, my Maryland
Invites you all to share our luck
Maryland, my Maryland
The great and famous old line state
Requests all farmers, poor or great
To meet with us in '38
Maryland, my Maryland.
Down in the Eastern U. S. A.
Maryland, my Maryland
Once you get there, you'll want to stay,
Maryland, my Maryland
The Maryland food is hard to beat

The Maryland girls are coy and sweet
And Baltimore's the place to meet
Maryland, my Maryland.

MR. CONNICK: The next gentleman who will speak to us was also a member of our Western invasion. When I saw him then, his brow was heavy with care. He had on his shoulders the great weight of getting the Maryland delegation out to Chicago and back home to the bosom of our admiring families safe, sound and sober, and he did it notwithstanding an accident to the engine.

To those of you who come from the Western Shore of Maryland an introduction is absolutely superfluous. He is known from the peaks of the Alleghany to the mud banks of St. Marys. We all know him over there and respect him and we love him. But in case there should be in the audience some benighted denizen of the wilds of the Eastern Shore who does not know him, I will say that the next voice you hear will be that of Wilbert L. Smith, retiring President of the Frederick County Farm Bureau, field man for the Maryland Farm Bureau, director for the Western Shore, Chairman of our Credentials Committee, the husband of one wife, and the father of a dozen or more children. Take it away, Wilbert!

MR. SMITH: Thank you, Mr. Connick, you had that almost right.

## REPORT OF CREDENTIAL COMMITTEE, 1938
## MARYLAND FARM BUREAU, INC.

The Credentials Committee in its certification of voting delegates for 1938 has followed the Constitution and By-Laws by only certifying membership received in the State Office up to and including December 31, 1937. If all counties had sent in their remittances before December 31 we would have shown an increase of 175 more members. These 175 members will count for 1938.

| *County* | *Paid-up Members* | *Number of Directors* | *Number of Delegates* |
|---|---|---|---|
| Anne Arundel | 75 | 1 | 1 |
| Baltimore | 448 | 1 | 9 |
| Calvert | 106 | 1 | 2 |
| Caroline | 241 | 1 | 5 |
| Carroll | 170 | 1 | 3 |
| Cecil | 81 | 1 | 2 |
| Charles | 145 | 1 | 3 |
| Dorchester | 107 | 1 | 2 |
| Frederick | 652 | 1 | 13 |
| Harford | 250 | 1 | 5 |
| Howard | 93 | 1 | 2 |
| Montgomery | 179 | 1 | 4 |
| Kent | 190 | 1 | 4 |
| Prince Georges | 312 | 1 | 6 |

| | | | |
|---|---|---|---|
| Queen Annes | 221 | 1 | 4 |
| Somerset | 161 | 1 | 3 |
| St. Marys | 65 | 1 | 1 |
| Talbot | 148 | 1 | 3 |
| Washington | 151 | 1 | 3 |
| Wicomico | 233 | 1 | 5 |
| Worcester | 80 | 1 | 2 |
| State Home & Community Chairman | | 1 | |
| Maryland Stockmen's Assn. | | 1 | 1 |
| Maryland State Horticultural Society | | 1 | 1 |
| Maryland State Poultry Council | | 1 | 1 |
| Maryland Cooperative Milk Producers, Inc. | | 1 | 3 |
| Maryland Tobacco Growers Association | | 1 | 3 |
| Hillsboro-Queen Anne Corporation | | 1 | 1 |
| Maryland Vegetable Growers Association | | 1 | 1 |
| Maryland State Beekeepers Association | | | 1 |
| Maryland Crop Improvement Association | | | 1 |
| The Agricultural Corporation of Maryland | | | 3 |
| Maryland State Horsebreeders' Association | | | 1 |

Respectfully submitted,

WILBERT L. SMITH, *Chairman,*
A. K. AUSTIN
O. F. GRIMES
CLAUDE PHILLIPS

MR. CONNICK: Among the many notable addresses that we heard at the Chicago meeting was one by a gentleman who not only knew how to talk, he knew what he was talking about. With the enterprise characteristic of the Maryland Farm Bureau, we at once secured his services for this meeting, so it is my pleasure and privilege now to present to you Mr. F. R. Wilcox, Director of Marketing Agreements Division AAA, and he will tell us about "Philosophy and Possibilities of the Marketing Agreements Program."

## THE WORK OF AGRICULTURAL MARKETING PROGRAMS

By F. R. WILCOX
Director of the Division of Marketing and Marketing Agreements,
Agricultural Adjustment Administration

### I.

Within the past week one unit of our organization received quite a surprise. That was the Federal Surplus Commodities Corporation, which buys surplus farm commodities and turns them over to State agencies for distribution to persons on relief. This unit is a part of the Department of Agriculture and carries out the purchase programs that are prepared in the Marketing and Marketing Agreements Division of the Triple-A.

The surprise was this: A body of farmers requested the Surplus Commodities Corporation to change its method of purchasing. The reason they offered was that the method being used placed upon the farmers themselves some of the responsibility for establishing the prices of their products which the corporation was buying.

These farmers had been farming for a good many years. They were real dirt farmers. In fact, they had so completely married the soil of their county that they were loathe to take any responsibility for the prices they were to receive. They had been selling their products at the prices they could get. Dealers and shippers had set the prices these farmers received. It almost bewildered them for an agency of the Government to answer their request for assistance with a program that offered them the opportunity to say something about the prices they should receive. Well—maybe they had talked a lot about the prices they received. Farmers have always done that. But what jarred them out of their traditional attitude was the fact that they actually had to *do* something about their prices.

It takes a good deal of courage for anyone to break through old established customs of marketing. Much of the marketing process is built almost entirely upon custom. Legal decisions upon marketing questions look into the customs of marketing, and are often based almost entirely upon what has been the traditional practice in the trade.

Traditionally the farmer has had little conscious influence upon the prices he received for his products. The buyer, commission man, shipper, or dealer has determined the price almost entirely upon the basis of market quotations established in terminal markets hundreds of miles distant from the farm.

That, I think, outlines a very important problem for farm organizations to do something about. And to the extent that the Maryland Farm Bureau Federation has taken the initiative to meet this problem, I commend your work. You and I both recognize that much more can be done, and I think we both have the desire, the courage, and the perseverance to contribute further progress to this work. The job lies largely, I believe, in education, in analysis, and in organization.

## II.

The opportunity for your farm organization to develop an agricultural marketing program is demonstrated strikingly by one particular problem. That is the large sums that are paid by consumers for marketing services on farm products. These are the services performed by middlemen all along the line from the farm to the city wage earner's kitchen—services of shipping, setting market prices, processing, packaging, wholesaling, jobbing, and retailing.

You will be interested in a few examples. The grower of Florida tomatoes late last winter received about one-fourth of the $4.50 per crate which the consumer paid. In August the grower of peas in Colorado

received about 21 per cent of the $2.85 per hamper paid by consumers. Last summer the Pacific Coast fruit grower received less than 20 per cent of the retail price for Bartlett Pears, and last fall less than 7 per cent of the retail price for apples. On the average the producer receives about 15 per cent of the retail price of canned foods and about 45 per cent of the price paid by consumers for dairy products.

No accurate figures are avaliable for the total cost of marketing farm products, but it is reasonable I think, to assume that over two-thirds of the money spent for food products grown on farms is spent for marketing charges. There are many opportunities for saving money in the marketing process by developing efficient methods of marketing and by eliminating the unnecessary marketing services.

## III.

What are the problems? What can be done? How can we attack the problem of excessive marketing costs?

The economists classify the services represented by marketing costs as creation of time utility, place utility, and form utility. To us those technical terms simply mean supplying the right kinds of commodities to people who have money to buy them at the time when they want to buy them.

The job of marketing farm products has become more complex and more costly with the greater specialization of production in recent years and the resulting new needs of finding new markets and expanding consumption. In general, it should be recognized that the services performed by middlemen throughout the marketing process have benefitted agriculture considerably. At some points in the marketing process excessive profits have been taken by some of the middlemen. On the average, however, these middlemen have not been overpaid for the work they have done. The point is that they have done some things that were not necessary at all or that were more costly than other ways of accomplishing the same thing would have been. We must recognize, therefore, that changes must be made in the marketing process, but they should not be made over night. Some of the fields in which improvements can be made are as follows:

1. *Standardization and grading.* One of the first steps that farmers must take responsibility for is improving grades and standards of their products. In some cases this is going to require also, growing better varieties of farm products, varieties that will meet the requirements of desirable grades and standards. Much of this job should be done by the farmers themselves or their own marketing associations. If they do the job effectively, they can increase the prices for their products, increase and stabilize their incomes, and expand the markets for the commodities they produce.

2. *Inter-regional cooperation.* This is a high-sounding name for a point that can be illustrated easily. It involves what I choose to call co-

operation among the farmers in different producing areas. I wonder sometimes whether it is desirable to ship oranges during the same period from Florida to the Pacific Coast and from California to the Atlantic Coast. Especially, is it desirable when growers in both areas are calling for help to fight off low producer prices? Then, too, sometimes I wonder if it is desirable or profitable to ship "C" grade apples from the State of Washington to this territory when Maryland and the surrounding States are already bulging with first-grade apples produced right here. Sometimes I wonder if it is desirable for Texas to sell an entire crop of pecans in a few weeks for a paltry nickel a pound and have someone who did nothing to grow them use the crop of pecans to set a price, perhaps profitable to him but disastrous to producers for the 18 months that follow.

At least, I should like to see these matters studied seriously by producer groups. It seems to me that they would probably come to the conclusion that marketing costs should be paid on the basis of the desirable services performed rather than upon the basis of speculative profits. They might conclude that it was desirable for them to take steps to regulate the flow of certain products into consumer markets. And they might be able to point out some services that could be quite largely eliminated.

## IV.

Closely allied with the problems of marketing costs is the matter of the price the farmer receives for his products. There are some groups among our farmers who have been talking in recent years largely in terms of parity prices. In my experience with fruit and vegetable crops during the past 20 years I have been led to wonder whether parity prices would really be a benefit or a disadvantage to the growers of these crops. Note, please, that I said prices, parity prices. Now incomes are something else again. Parity incomes are an entirely different story.

My point is that farmers should not be interested in prices as such, but only to the extent that they can benefit in terms of net incomes from certain prices. In the case of fruit and vegetable products declines in prices in the last 20 years have undoubtedly benefited producers considerably. They have made it possible for markets to be expanded and production of these specialty crops to be expanded at a rate that was profitable in terms of net incomes. From 1920 to 1924 grapefruit production averaged about 7,500,000 boxes It increased to more than 10,500,005 boxes in 1926 to 1930, to nearly 17,000,000 in 1932 to 1936, and more than 30,000,000 in 1937. Production of lettuce has increased from an average of less than 7 million crates from 1918 to 1922, to an average of nearly 20 million crates since 1928. During the same period the production of celery increased from slightly more than 4 million crates to more than 9 million crates.

These increases in production have been accompanied by somewhat

irregular declines in price levels. Adjustments of prices and grower incomes have likewise been quite irregular. Agricultural marketing programs would probably have facilitated many of these adjustments and improved the positions of growers, middlemen, and consumers during these periods.

On the whole, growers have benefited from this increased production of certain specailty crops even though prices have declined. The lower prices have helped to move the larger supplies into consumption and to increase the net incomes of growers in some cases. Consumers have benefited also from the increased quantities of fruits and vegetables made available to them at the lower prices.

If we are going to continue to fulfill the needs and desires of the consuming public through increased production of these specialty crops, we must shift our thinking to terms of parity income rather than to parity prices.

So far we have reduced costs of production with improved varieties, control of diseases and pests, and better farm management practices. Therefore, farmers can afford to take a lower price per unit and still increase their incomes in some cases.

Through cooperation with distributing agencies, farmers and their associations can reflect price changes to consumers and get them to buy larger quantities. In November a survey of leading stores in the Metropolitan New York area revealed that lima beans were selling for about 15 cents per package of 13 to 16 ounces. The price received by the grower for these lima beans was slightly more than 4 cents per pound. In the fall of 1936 lima beans were selling in the same group of stores for the same price, but growers were receiving about 8 cents per pound for them. Production in 1937 was considerably higher than production in 1936, but still consumers paid the same prices as in 1936 while growers received about half as much as they did in 1936.

There is one main purpose for retail price changes; namely, to induce consumers to buy more of a commodity or to keep them from buying as much. The extent to which consumers buy less when the price goes up or more when the price goes down depends largely upon their consuming habits and their needs. In the case of many fruits and vegetables, their reaction to price changes may usually be expected to be quite strong as contrasted with such commodities as Irish potatoes, flour, salt and so forth.

It would seem that in years of heavy production the margins of costs charged by middlemen should be reduced rather than widened. But under present marketing traditions and processes, the margins for marketing services are more widened in years of large production. Then producers receive lower prices, but the prices paid by consumers do not decline proportionately. The result is that consumers do not buy as large quantities of the heavy production as they might be expected to if they could buy at lower prices.

The reason for this seemingly unnecessary widening of the margins for

marketing costs lies in the fact that under existing marketing processes, the price risks of handling a large crop must be assumed almost entirely by the handlers and middlemen. The farmers themselves assume very little or none of the risks. They ship or sell their products at unpredictable, irregular, and even unreasonable intervals. Handlers usually cannot predict from one day to the next within a wide margin the quantities of a crop they will receive. As a result they must assume the risk of offering a certain price and receiving much larger quantities than their usual marketing channels will take. Under such conditions they would have to lower their prices to get rid of the commodity they were buying. To be prepared for these contingencies, handlers must take considerably wider margins in years of large production than in years of average or small production.

## V.

Market expansion has come to be very important to fruit and vegetable growers as a whole. It is essentially a group problem rather than a problem to be met by the individual grower.

The Farm Bureau people have always recognized the major possibility for expansion of domestic markets. That possibility is the formulation of a general agricultural program upon a sound basis so that the real incomes of rural and urban people alike will be increased.

The Bureau of Home Economics did some interesting work along this line in cooperation with the Program Planning Division of the Triple-A. Their studies show some of the possibilities of increased purchases of important food products by consumers. For example, in 1929 only 20 to 25 per cent of the families in the United States could afford what was described as a liberal diet. They estimated that if the entire population could have the type of liberal diet which the Home Economics people would recommend, the dairy cow population would have to be increased by 75%, and fruit and vegetable production would have to be increased considerably. Assume a much lower goal and the possibilities for expanding production of many fruit and vegetable crops are still large. Farm families themselves consume products in prosperous times that they would have to sell for cash income in hard times.

A virtual requirement for effective market expansion is the need for thinking and planning on a national scale, rather than on a sectional or group basis. Some group advantages in our economy have been deadly to the entire system and to farmers in particular.

Expansion of foreign markets is a necessary consideration in any national effort to improve the position of farmers. Progress in this realm may seem very slow to those who have important advantages to be gained, but it must be remembered that most sound and lasting progress is ordinarily slow and plodding.

## VI.

These problems of farmer responsibility for marketing, or wide margins, of uneconomical marketing, and so forth, do not lend themselves to simple, easy solution. The lines of attack upon them must be broad and inclusive. There are a few specific suggestions I should like to make.

1. The Farm Bureau and other farm organizations offer a medium through which solutions to many marketing problems may be developed and put into effect. Individual and group interests sometimes have a tendency to smother broad, long-time policies. For this reason, it is well that national farm organizations develop broad policies for agricultural production and marketing. From the basic principles adopted they can proceed to develop more specific proposals for improvements in agricultural marketing. These should be based upon analysis and study of farm groups and local associations. The statements of problems by the larger organizations should form the basis for a general educational program. Frequently producer groups have not fully impressed upon the State Colleges the necessity for developing agricultural marketing programs. Some of the most effective work in promoting these programs through adult education can be performed by farm organizations.

2. Farmers' cooperative marketing associations are particularly effective mechanisms for the solution of agricultural marketing problems. They are able to deal directly with common problems in whatever detail is necessary. Their services to farmers may help to establish market grades and standards. They can cooperate and bargain with established industrial and market outlets in the interest of the producers. They can seek out and help to establish new markets for commodities. They can reduce certain marketing costs by providing financial and storage facilities.

3. Governmental programs to promote agricultural marketing in the interests of farmers can meet many of the problems that the farm organizations and cooperative associations are not equipped to meet directly. These include both State and Federal programs, for in many instances neither type of agency could be as effectffive as it might be without working in conjunction with the other. Furthermore, these State and Federal marketing programs cannot accomplish as much as they might without the supplementary work and the assistance of farm organizations and cooperative associations. What these producer groups cannot accomplish directly, they may be able to accomplish indirectly by working through State and Federal marketing programs.

Under the Agricultural Marketing Agreement Act of 1937 handlers of agricultural commodities can enter into voluntary marketing agreements with the Secretary of Agriculture to promote orderly marketing of farm produce. More complete programs can be promoted by producer groups under the Act through marketing orders. These may be issued to require all handlers of a particular commodity grown in a cer-

tain area to comply with the terms of a marketing agreement program. An order may be issued to supplement a marketing agreement if issuance is favored by two-thirds of the farmers who would be affected and if the marketing agreement is signed by a majority of the handlers who would come under the program.

These programs bring the principle of farmers' cooperatives into marketing programs. It achieves what cooperatives have sought to achieve through many long years of organizational and legal difficulties. It requires the small minority that might otherwise undermine the whole program to comply with the marketing requirements recognized as desirable by the large majority.

These marketing agreement programs can promote the adoption of standard grades and sizes that will benefit growers generally. They are designed basically to regulate the flow of supplies to market. However, when fixed marketing charges taken by middlmeen make it largely impossible for growers to depend upon even large enough prices in terminal markets to pay freight charges, the less desirable grades and sizes may be eliminated in order to stabilize growers' incomes to the extent that such action is effective. Some dealers and processors dislike these programs because they place in growers' hands a considerable amount of control over the marketing of the goods they produce. The programs work most effectively in instances where growers are well-organized in cooperative marketing associations. Depending to some extent upon the location of consumer markets, these programs often need similar regulations upon marketings within the State through State legislation and administration. Even more important than actual State legislation in many cases is a sympahetic understanding by the State Colleges, the State departments of agriculture, and the growers. They must comprehend fully the purposes and the mechanisms of these marketing programs if much is to be accomplished.

In this realm of promoting better understanding of agricultural marketing programs by the State Colleges, the State departments of agriculture, and the farmers, lies the most effective work that organizations like the Maryland Farm Bureau Federation can perform.

This opportunity challenges your courage to break through customs handed down from the past. It prods you into the field of experimentation. To accept the challenge you must have the courage to take the chance of sometimes being wrong and admitting it. The best brains and brawn of your organization are not too good for the job. They will be needed if mistakes are to be few and if useful ideas are to be segregated from inadequate ones.

The light is brightened by the fact that you are not unprepared. You have fearlessly faced and courageously corrected many agricultural deficiencies equally as difficult to handle. Mr. Ogg and others in the American Farm Bureau Federation and many in the State organizations deserve recognition for their work for agriculture. American agriculture challenges you to lead the way to better distribution among consumers

of the products of your farms.

MR. CONNICK: I have frequently noted that in examining very closely the underlying causes which have ruled the human race there is always a woman involved. We poor men seem to be unable to do anything without a woman's assistance. We never know what kind of clothes to wear, nor the proper color for a necktie. We never could drive an automobile unless some little fairy on the back seat tells us what to do and not to do. We mere men even in the Maryland Farm Bureau have taken cognizance of this fact, and today we have with us a lady, a capable lady, a charming lady, and I trust a good natured lady who will tell us in twenty minutes,—now that must be a mistake. Where in this wide, wide world is there a woman who could even get warmed up to talk in twenty minutes. However, with the gallantry that is native to all the males in my section of the State I shall give her all the time she wants. Ladies and gentlemen, it gives me a great pleasure to introduce to you our back seat driver of the afternoon, Mrs. E. C. Dunning, of the Inter-state Milk Producers' Association, who will talk on "How Women Can Help in Farm Organization."

## HOW WOMEN CAN HELP IN FARM ORGANIZATION

By MRS. E. C. DUNNING
Inter-State Milk Producers Association

Mr. Chairman and members and friends of the Maryland Farm Bureau:

It always seems to me that the best approach to any problem of an organization of people is to isolate an average person or family of that group and from a satisfactory solution of the problems of the smaller group, it is fairly safe to assume that the same solution will serve as a basis of operations for the larger organization. For instance, I believe that a well-balanced budget for the average farm family will have the same objectives as a well-balanced budget for the farm organization. I believe that the matter of building a reserve for the farm family has the same objectives as does the building of a reserve for the farm organization; namely, to take care of matters of education, of protection and emergencies. I believe that the legislative problems which so vitally affect the social and economic life of the farm family are the very same legislative problems which affect the well being of the farm organization. I believe that the matter of membership and loyalty in the family circle involves just the same sort of approach as does the matter of membership and loyalty in the farm organization. I believe that the place of women in the Farm Organization is exactly what it is in the farm home.

For nearly fifteen years I have been closely associated with farm groups, and I have become convinced that to be really effective a farm organization must represent the sum total of the needs of its individual

farmer families. We must assume that the purpose of the organization is to meet those needs, otherwise there is no excuse for the existence of the organization. We must assume, and too many organizations do not, that those needs can only be expressed by the farm families themselves, in their own manner, and from their own actual experience. And therein lies a tale about which volumes could be written. To state it briefly, let me say that you will never learn of farm needs sitting behind a desk in a city office, nor even in a farm meeting. The only place to learn of farm needs is in farm homes at the family dinner table, standing in the barnyard with the stock, walking in the orchards or across the fields. I have never experienced moments of greater exasperation or embarrassment than when listening to a speaker telling a farm group how things ought to be done, and knowing full well from his officious manner and intolerant attitude that the only knowledge of farming he had, had been gotten behind a desk somewhere, or perhaps so many years ago that the memory was as little dependable as was his advice. It is a sad commentary that so many of the speakers sent out to farm meetings are of this type. Let me repeat, the purpose of a farm organization must be to meet the needs of its individual farm families, and those needs can only be learned by personal contacts on the farm.

Since the subject assigned to me is, "how farm women can help in a farm organization," and since my time is limited, I am going back to just one deduction from my general theme, and that is, that the matter of membership and loyalty in the farm organization involves exactly the same sort of approach as does the membership and loyalty in the family circle. This is so irrevocably bound up with the place of the women in the farm organization that I find it hard sometimes to understand why there should be any occasion to separate the two premises.

As I go to Institutes and Conferences and Meetings of various sorts, and as I hear and observe the discussion of the various problems that confront the organizations, I see such a loss of time and of energy and of money in the discussion of legislative set-ups, of executive set-ups, of financial arrangements, of transportation problems, of distribution problems and of production plans and a hundred and one other things, the success or failure of anyone of which is ultimately based on the loyalty and cooperation of individual farm members of individual farm families. "Yes," one prominent cooperative leader told me, "we realize that there is something in what you say and some day we will have to go into that." I know a woman who for twenty years has been hearing that story every time she has tried to make the executives of her organization understand that they are putting the cart before the horse when they do not see that by building a strong, well-trained and understanding membership of loyal and devoted farm men and women they are making it easy to solve many of the knotty problems that arise. No vehicle, nor organization, no matter how fine, can make much time over a bumpy road, and if it does, both it and its drivers will be wracked to pieces, but given a strong, firm and smooth foundation, it can accomplish

wonders, and neither it nor its drivers be any the worse for wear.

Please remember that all through this talk I am assuming that you are keeping in mind my major premise; namely that just what a farm woman is to the farm home, that she is to the farm organization. You men folk realize that there is a need for your organization, just so you must realize that we are a part of it, since we are so great a part of your interests and your life. We are willing to take that responsibility, but you must make a way for us in the organization just as you did when you made a way for us in your life. At the Institute of Cooperation this summer I nearly fell over backward when I heard an Executive say that the membership problem was the most important problem of the farm organizations. Of course it is, and when we can get our leaders to recognize the fact that such things as assessments, as legislation, as transportation, as reserves and as production plans are well nigh solved when the matter of membership loyalty and cooperation are solved, then we can start doing things, and going ahead, instead of going in circles from one managerial administration to another. An organization that has a well informed and loyal membership can do almost anything in the matter of legislation, of maintenance and of continued education.

Just as the successful home is builded on the loyalty and good fellowship and cooperation of every man, woman and child in it, so must the successful farm organization be. This is not a hastily pushed through affair, nor a forced affair; it is a matter of education that makes for complete understanding. Show me the fellow who brags about signing up a large number of contracts in a day and I'll show you the fellow who is building his organization on a sand pile. Show me the organization which brags about a big sign-up in a short time and I'll show you an organization headed for the rocks. Loyalty depends on understanding, and understanding depends on education, and education is a slow process.

Who is to a great degree responsible for the educational activities in your home? Who is it who helps with the lessons, plans for the music and the art lessons, gets the children off for Sunday School lessons, plans to arrange somehow to get them to normal school and to college? Not much room for argument there, is there? All right, who then must we depend on to educate the family to be interested in their organization? Picture for a moment, a community of farms, farmers and farm houses without the women in them. Picture, if you can, the empty shells those houses must be. Try to imagine the emptiness and the uselessness of the life of those men. Oh, they may become rich and have plenty of leisure and of hired help but what use is it to them? It just is not possible to go on building and planning and scheming unless somewhere in the building scheme is a heart. And organizations are no exception, if they have left out the women and the children as an active support, they have left out the heart of the organization, on which all other things hinge. They have spent years of time and worry and money trying to solve difficulties which would, to a large degree, have solved themselves, had they had the support and the confidence and the loyalty to build

on, to work with and to give them the assurance that they have so badly needed.

Even strictly business organizations have learned in the past twenty years that they cannot build on a firm foundation with any degree of satisfactory security unless they put a heart into their organizations. To do this they have used all manner of devices based on building up the morale of their employees. They have founded Women's auxiliaries and I have been much interested in watching the mental and social processes of some employees of the Pennsylvania Railroad who live near us, as they have worked tooth and nail in plannnig programs where the men and women meet together each month for a social evening with each other and with the local executives and their families. The old-fashioned, hard-boiled boss has gone, and in his place is a man who has a heart, if you please, and who will take his wife and his family to play and to eat with the employees one evening a month. Why? because it is good business, and I don't think that is quite all either. There is a huge amount of satisfaction in having the confidence of the folks with whom you are associated in your work, and in feeling that you may be good for them and that they may be good for you. But as a purely business proposition, any organization, whether business or service, or a combination of both, as is the farm organization, knows that they need expect few labor or membership troubles if they can get the support of their women folks.

The oldest and the largest and the most successful of all organizations, the church, has, from the beginning, been one of complete cooperation between the men, the women and their families. Can you imagine a church holding together over a long period of time without the help and the active support of its women folks? You say, but it is not a business proposition. Not strictly, no but neither is the cooperative or farm organization. Nor can they be to succeed, because farming is more than a means of making a living. It is a Life. Each farm unit is a small cooperative venture and in that venture are included all of the activities that go to make up the lives of the individual members of the unit. That living includes the business of producing and marketing, but it also includes the business of education and training to do those things successfully. That education cannot be carried into the farm home to any degree without the cooperation of the mothers in that home. One manager came to me with the defense, "But women cannot get along together." Of course, there are women—and women—just as there are men and men. Did you ever see or hear of a board of directors agreeing on any sort of a matter either of policy or of fact? And it would be a sorry world if they did; how on earth would we ever get anywhere if we were a bunch of sheep who followed the leader? It is not always pleasant to have people disagree with us, but it is the finest sort of education.

Some directors and managers and leaders have been unable to see the women's place in the organization because they claim it is a strictly

business affair and women know nothing about business. To begin with it is not a strictly business affair as I have already pointed out, unless you choose to agree with the modern version that it is good business to concern yourself with the heart of an organization. In the second place, we have quite a lot of evidence to present in defense of our statement that women do know something about business, since 60% of the real estate in the country is owned by women, and 80% of the money is spent by women, and lest someone come back with the wise crack that there is no question that they can spend it all right, let me remind them that there are very few women in congress.

Men folks, give your women a chance, a very *definite* place in your organization, for you are going to need them badly. The consumer organizations are growing by leaps and bounds. They are strong in number and in power. They are working hard in organized study groups all over the United States. Unfortunately, many of them are not well informed and their only interest is a bargain store sort of attitude of getting commodities cheaper regardless of who pays the bill. If the women of Baltimore tomorrow decide that they want ice cream five cents a quart cheaper and all of their consumer groups decide not to buy any ice cream until they get it, you can just rest assured that they are going to get it, because as I said before, they have the numbers, and they have the organized power. In addition, they have the powerful Federation of Women's Clubs behind them. And you farmers are going to pay the bill, don't make any mistake about that. A most potent illustration of what this may mean happened in Washington last spring when the Federation of Women's Clubs got behind a bill to reduce the tariff on the materials that go to make up oleomargarine. Charles Holman, Secretary of the National Milk Producers Federation, told us at the Institute of Cooperation that it was only because of the fact that one dairy organization had been foresighted enough to train its women in the matters of legislation that they were able to send to the Dairymen's League for Miss McCrea, to get their legislative group of women together, and hastily present such pressure as was necessary to stall the action which would have resulted in a loss of real dollars and cents to every one of you who derives any income from dairying. Dairy interests and all farm organizations have worked hard to fight the continued and ever increasing use of oleo-margarine, but if the consumer organizations get back of it, as they will if they are not educated to the contrary, you can rest assured that they will get cheaper oleo and use more of it, thereby decreasing substantially your income. You folks must be prepared and be on the alert to send your women before those groups, before your control boards, before your legislative hearings to tell them the real story about butter. You have the advantage of having a real story to tell, but don't give them the advantage by being asleep at the switch. Filling food is cheap just as is muslin filled with starch, but when it comes to endurance in the human being or in the muslin, the substitute products won't be able to hold their own. You know this,

but they do not, and the makers of oleo are going to try just as hard as they can to keep them from knowing it.

There are two types of the consumers' groups. The one is that mentioned, the sort who eagerly snatch anything modern or new, just because it is new. They do not bother to sift and grade and study evidence, they simply take the stand in public, in the press, anywhere to be heard or seen and tell what they know, which is usually a small part of the story, and only one side of it. They can tell a fine story of how they want the price of milk or butter or beef steak reduced because of low wages, unemployment and high cost of living. They can always scare up an emotional appeal that gets results because there is no one to appear to question their side of the argument, for producer women folk do not appear in the press, before public meetings and in legislative halls. There is, I must make haste to add, another type of consumer group which is doing a good job and is earnestly trying hard to help the consumer in intelligent buying and to help the producer by making him understand what the consumer wants and is willing to pay for. But they are having up-hill work, first because the more radical and less well informed groups have put the whole thing up to the public in an unhappy light, and second, because they are having trouble finding producer women to present their side of the story.

I am a member of the American Association of University Women and one of the members of the Philadelphia Branch said to me one day when the matter had come up in a general conversation, "but we can't find any farm women to come and talk to us about the producer side of the story. We have plenty of consumers ready to tell their story, but where are we to get the other side?" Just here it seems to me is one of the big opportunities for the farm organization. To train their women members to meet this need. In every city there are dozens of these consumer study Groups. There is a demand for women speakers on every platform of every sort of conference of women's clubs to bring the story to them. Just now it is a popular theme and an important one. They want it and they need it, in their various activities. What a grand chance to get support for legislation, and cooperation from government and from business.

The press is more than anxious to get the well written story of the farmers' business, not statistics either, in spite of what some misguided editors of farm papers seem to think. They want real stories of real farm life, its troubles and its joys, its children and their accomplishments, how they face depressions and prosperity. Put your women on your local meeting programs as speakers, give them a chance to prepare, in smaller meetings, to go before the world with your story, when you are too busy to do so, and in places where you don't fit. Ask them to write articles for your farm papers, you will be surprised when you see what they can do and how the reading public likes that sort of thing. After a time put them on your local executive committees and still later on your board of directors. You will soon find too, that when mother be-

gins studying these things and talking about them, the children will also begin talking the same language in their school affairs and among their friends. And remember, men folks, we don't want to be just welcome to come to your meetings, we want to do a real job and see it through because that is the way we help at home and we somehow can't accustom ourselves to being ornaments. Women as ornaments went out with bustles and high bicycles in the gay nineties. Mr. Holman, in his appeal to organizations, asked them to give more time and more thought to the mobilization of the women to meet the growing demand for more action and more publicity in farm affairs. For so long there has seemed to be a feeling that women were really a luxury in farm organizations. If that time ever was, it has now passed, and thinking leaders will realize that they have become a real necessity in the organization as they are in the home.

To those of you who are interested in the ideals of organization and of cooperation, and who have confidence in the ability of your women folk to really help you build a finer sort of farm life for America; I say "Give us a chance." To you who are chiefly interested in the business of farm organization as a matter of making more money and of creating a public opinion that will be an asset in dollars and cents, I say "Give us a chance." And women folk, remember, it's really up to you. It will mean more work, more reading, more study, more trips away from home to meetings, but it will also mean education for your children, more comforts for your home and more satisfaction in your life. And when has an American Farm Woman ever considered the work or the hardships involved in any matter pertaining to the welfare of her family? And remember—all of you—that the restoration of the Pride of the American Farmer in His Business— in His Land and in His Life must always be your objective.

There is no finer profession in all the world than that of the American Farmer. The banker, the doctor, the teacher and the scientist are doing a fine job and are of tremendous importance, but ALWAYS remember that when that farmer on yonder hill-side stops plowing, the world stops. The banker, the doctor, the teacher and the scientist are useless without the food which you provide, just as useless as is your fine car with its fine motor but no gasoline. You folks are the foundation of the civilized world. Tell it loud and especially tell it to your children. Be proud of your life. Be proud of your job. And make your children proud of it. Dig your roots deep and deeper into the soil of darkness and of silence from which all life springs.

MR. CONNICK: Our next speaker comes out of the West from that grand old State that gave birth to the Farm Bureau, and where it has reached its highest peak of efficiency. I don't know what he is going to talk about. The printed subject does not mean a damn, but whatever it is he is going to say I can guarantee to you that it will be forcibly and well said. I certainly appreciate this honor of being allowed to present to you this afternoon Mr. M. D. Lincoln, Secretary of the Ohio Farm Bureau.

## TOMORROW'S COOPERATIVE WAY

By Murray D. Lincoln
Secretary, Ohio Farm Bureau Federation

First permit me to bring greetings to you from the Ohio Farm Bureau Federation, and to express to you our appreciation of the fine relationship that we have in our mutual insurance services. I value the opportunity of having a close contact with your Secretary, Mr. Wise, who is on our insurance board, and I am looking forward to similar contact with your President, who has recently come on the board of directors of the American Farm Bureau.

In the beginning of my discussion of the topic assigned me, I would like to stop long enough to take account of the general agricultural situation. Viewing 1937 in retrospect, we appreciate that from the standpoint of farm income it was one of the best since 1929. In fact, the agricultural income in my own state of Ohio is estimated to reach $343,000,000 as against $345,000,000 in 1929. Just what is ahead, of course, no one knows, and there is much concern about it. But we are happy for the good year we did have and you can see evidences of this increased income everywhere. New barns are going up, houses are being modernized, fences are being repaired and erected, and farmers bought more farm machinery than any year since 1929. This is concrete evidence that when farm income is up it makes business for everybody.

But in spite of this improvement we are yet a long way from attaining the economic justice that rightfully belongs to the farm people of this nation. I think Secretary Wallace has given us a set of figures that more adequately portrays the condition that agriculture is facing, and has faced, and to me tells in a nutshell what the real farm problem is. Following are the figures:

| *Year* | *Percent Population In Agriculture* | *Farm Share of National Income* |
|---|---|---|
| 1850 | 63% | 35% |
| 1900 | 36% | 20% |
| 1920 | 26% | 14% |
| 1932 | 23% | 8% |
| 1936 | 24% | 9½% |

As I see it, there are two main methods by which this problem can be attacked. First, by government aid, and second, by voluntary organization and economic cooperation.

It has been said that "political action cannot pioneer, resting as it does upon the consent of all the people. Political action is a safe procedure only if a majority of the people are of one mind". It is for this reason I have serious doubts as to whether or not farmers can solve their economic and social problems through legislative action alone. True, legislation is important, but to me economic power gives legislative power, and together those two forces largely dictate what our economic and

social development is going to be. So, while I am perfectly willing to support the present efforts of Congress to solve the farm problem, I look upon these efforts largely as temporary measures and to be supported as such.

Meanwhile, however, I believe most thoroughly that farmers can do much to alleviate their present condition and look forward to the time of the best solution of their problem that is possible, if they will organize themselves and develop their own farmer-owned and farmer-controlled agencies.

Fifteen or twenty years ago when I first started with the Ohio Farm Bureau, I found many farmers of the opinion that it was useless for farmers to attempt to organize and cooperate. Did you ever hear your neighbor say, "farmers are too individualistic, they never can, they never have, or never will co-operate". We now have evidence to show that such statements are not true. Farmers have demonstrated their ability to organize and to cooperate. But it is regrettable that so few farmers themselves appreciate what has really been accomplished along this line.

May I point out some of these accomplishments to you?

You are undoubtedly well aware of the fact that the G.L.F. Farmers Cooperative of New York State owns and operates what I have been told is the largest feed mill in America, if not in the world. It is a most successful enterprise rendering very distinct service on feed, seed, fertilizer, fence, petroleum products, and recently, human foods. We are told that the fertilizer business carried on by the Michigan, Indiana and Ohio Farm Bureau cooperatives constitutes the largest single tonnage put out by any one plant in the country.

You farm folks who are members of some branch of the Farm Credit Administration, either the land banks, production credit associations, or cooperatives, are helping to run one of the largest finance systems in the country. This is not as completely cooperative as I think it will be some day, but anyway, a fine start has been made.

I was interested in a comment Governor Aiken of Vermont made recently in an address to the Vermont Dairymen's Association. He stated that farmers through their production credit associations in New England, had loaned millions of dollars and that up to date their loss had been only $200. He added this significant comment: "Farmers themselves are making a better record in lending money to their neighbors through their cooperative organizations than has been made in most cases by professional money-lenders."

Your Farm Bureau is associated with others in the sponsorship of the Farm Bureau Mutual Automobile Insurance Company, with which I am connected in an official capacity. I am sure you are aware of the fact that together we have built a company that is now the seventh largest automobile insurance mutual casualty company in the country and as a result of getting together on this one project we have so controlled our reserves and surplus that we have been able to furnish the

capital for our own fire company and to buy the controlling interest of a life insurance company.

Figures given us recently seem to indicate that county cooperatives, through their state Farm Bureau Cooperative Association, are distributing 33 per cent of the petroleum products going to farmers in the state of Ohio. We undertook this work first in 1933. So far as I can find out no other group ever developed this percentage of business of any one commodity before, in the short time of four years.

When our Farm Bureau started sponsoring the development of rural electrification made possible by the funds available through the Rural Electrification Administration, figures showed that 18 per cent of farm families in Ohio had electricity in their homes. Recent figures show that 35 per cent of rural farm homes now have electricity. Thus, in two short years, as many farm homes have been electrified as in all the previous time. True, the cooperative development has not served all of these, but in addition to the ones they do serve, they have greatly stimulated the extension of rural lines by old line companies, and together the two systems make up this percentage.

The size and success of these enterprises amply demonstrate that farmers can and do cooperate. They have thrown up from amongst themselves men and women with the capacity to direct these enterprises and to choose management that has successfully matched wits with the existing distributive system, and in nearly every case, bested them. Farmers should take encouragement from this record and prepare themselves to enter into other lines.

As I see the future needs, the first is organization. The farmer cannot go it alone. In the present complex society he is virtually helpless unless he joins together with his neighbor in a local organization, and then federates the local organizations into counties or districts, then states, then the nation. For instance, as I pointed out to the dairymen of Ohio, how in the world can we ever hope to bargain effectively with such nation-wide systems as the National Dairy Company and Bordens, when we have at least thirty-eight separate local dairy organizations in Ohio, with very little federation?

It is the same with cooperative elevators. Much time and effort has been put in by farmers toward the development of these elevators. Too often they stop with one unit and do not organize themselves for more effective marketing or purchasing. And in connection with the need for more organization, may I point out that in my opinion the cost of organization is never as great as the cost of the lack of it.

I could give many illustrations to prove this, but I think of one that, to me, is classic. Figures show that the present price of fertilizer is approximately 6 per cent over pre-war prices. Nearly everything else that the farmer buys is higher than that, the average figure being 32 per cent for the year 1937. Farm machinery is 52 per cent, approximately, over pre-war. I hold that if we had conducted as much cooperative effort in the purchase of farm machinery as we have fertilizer,

that figure would be different. And that is one of the reasons why the Ohio Farm Bureau is now getting into the machinery business, because we find that farmers buy more machinery than any other single item. In our state the seven year average expenditure for machinery is 13 per cent of total cash expenses.

There are many legislative things that might be accomplished today in behalf of agriculture. I think farm organizations have done a magnificent job representing, as they do, only a small percentage of the total farm population in their membership. How much more could we do along the line of reduced taxation, elimination of monopolies and the like, if we had a strong enough organization to bring those things about? That's what I mean when I say the cost of the lack of organization is always greater than the cost of organization. Many farm homes today are not electrified, and have been without electricity for years, again evidencing a lack that might have been changed if we had been sufficiently organized.

Then, we need to venture into other fields. Farm cooperatives have made a good start, but only a start. Frankly, I am dismayed at the lack of progress that has been accomplished in our farm marketing work. In spite of the years of effort and millions of dollars put in by farmers themselves, and later on by the government in the Farm Board activity, if we look at the situation fairly and squarely we will have to grant that while we have assured honest weights and grades and have done something in cutting down the cost of collection, actually we have accomplished very little when it comes to influencing the general price level of our commodities, or bettering the per cent of the consumers' dollar that is reflected to the farmer.

I was interested recently in reading a bulletin showing the experience of the Danish cooperatives. Their official agricultural statistics show that the Danish farmer receives 63.4 cents as against 36.6 cents for distribution, and here in America it is practically the reverse, the American farmer getting 38.5 cents and distribution 61.5 cents.

I see no reason why we cannot vastly improve our present distribution situation. And if it were possible to bring about the above percentage of return to agriculture, think what that would mean to the farmers of America.

Another thing I like to point out to farm folks is the fact that often wherever exploitation of a people takes place, it is done with their own money. May I illustrate: Remember, if you will, that insurance companies constitute a secondary system of finance in this country. You and I and other citizens of America pay thousands of dollars into the treasuries of these big companies. If you will examine their investment portfolios you will undoubtedly find that many of them have bought shares of capital stock of railroads, utility companies, industrials, and the like. And this is where I say the people's own money is often used to exploit them. Let's say, for instance, that some of these companies have bought shares of the capital stock of one of the big dairy distribut-

ing companies. That means part of the money you have paid in to these insurance companies may be furnishing the capital stock to a dairy distributing company which perhaps is having much to say as to what price shall be paid to you as a dairyman, for your milk. The same is true with electrical companies, and many others.

Back in 1926 the Farm Bureau in Ohio started our automobile insurance company wtih $10,000 taken from our membership fees. The assets of this company, of which you are a part, now approximate six million dollars. In undertaking this service we find we have been able to render as good or better service to the policyholder, and do it at a saving of approximately 40 per cent over premiums charged by old line stock companies. In addition to this saving in the service itself, we have done something else that to me is of tremendous importance, and that is, we are mobilizing our own capital.

So, by building our own companies, we are controlling our own investments. I do not mean for a minute to imply that when an insurance company invests in some of these existing old line companies that it is not a proper procedure. It is from their standpoint, and in fact we would never think of investing all of our reserves in any one enterprise. We, of course, have more government bonds than anything else, but we have been able to help ourselves, in addition to the saving of the service, by investing some of the reserves of the automobile insurance company in the capital stock of our own fire insurance company. And in addition, by the use of $300,000 of our own reserve we bought the controlling interest of a life insurance company which now has assets of $2,356,734.

In other words, we are now doing to others as we have been done to, and unless we had a different purpose, which we have, we of course would be no different than any other company, but in all our cooperative endeavor we are not only attempting to render the service at a competitive price, but savings over and above the cost of doing business, and the reserves are reflected back to our members who made the business possible, thereby developing our own business rather than furnishing the capital to somebody else to take it out of us.

And it is also important that we do this in order to keep other groups from making a profit on our business and using those profits to influence legislation that is harmful to us or preventing us from getting legislation that would be beneficial.

Please do not understand that I am claiming all business is bad. Such is not the case. Also understand that I do not believe in monopolies. We neither believe in them, nor want one for ourselves. All a cooperative has to do is to have sufficient percentage of the total business to set up a yardstick by which prices, quality and service can be measured. And oft-times the influence of a cooperative on the general price level is actually worth times more to the farmer than the meager savings or patronage dividend his own institution may be able to reflect back to him.

I have already said that farmers should be developing more organiza-

tion and more economic enterprises. This I believe very thoroughly. Actually, I know of no service being rendered to farmers or any other group of people that could not be improved by the application of the co-operative principles. It costs too much to distribute goods in America. They say the competitive system regulates such charges. I deny that. To me, there is necessity to change the motive of business in order to bring about the greatest development. The motive of existing competitive business is to secure all possible profits for the individual management, owner or stockholders. The only motive that would justify a cooperative is in order to benefit a group which has made the business possible. The time should come when a farmer or a consumer would first attempt to buy goods or services through his own cooperative agency and if such services are not available he should be banding together with his neighbor to render such services.

Several cooperative groups in the country are now handling ladies' coats, hats, suits and dresses. Little did we think when we started the Farm Bureau that we would be in this line, but here we are, and we think a worth-while service can be rendered. They say that men-folks really dictate what the ladies wear. Therefore, perhaps we can look forward to the time when a group of you good "Farm Bureau-ites" are called together to determine what the style of clothes will be for the coming season. It will at least be an interesting experience.

Two years ago one of our directors challenged our home office employees group that they were not practicing what they preached, and as a result we have set up the Farm Bureau Consumers Cooperative. It has been amazing to me to realize this development. The employees have their own store and their own gas station. We have a cooperative arrangement on milk, coal, laundry service, automobile supplies, men's clothes, electrical equipment, and smaller items for both women and men. While my purchases are necessarily limited in that group, because we do not handle any too many lines, my patronage dividends for the last six months amounted to better than $19. We are talking of cooperative medicine; of cooperative burial societies. A group of our employees is discussing a cooperative housing project.

I only mention these things to indicate some of the new lines that we are thinking of in order to service the individual. I have a great faith in the coming consumer cooperative development that I am sure is now under way. To me, that offers the best hope for helping the farmer in his problem. I regret to say that I doubt if the farmer by himself can lick the present distributive system, but if we can get consumers of our products to join together in consumer cooperatives, we will have an agency with which to deal direct and thereby circumvent the present distributive system with benefit to both consumer and to the farmer.

It is the sale and purchase of goods and services, the bank deposits, insurance premiums, and the like, made or conducted by the average individual that together make up the great economic enterprises in America. Too long have these enterprises been conducted for the bene-

fit of the few. They need to be conducted for the benefit of the many.

Your board of directors has already considered the establishment of advisory councils or study groups, as we call them. The average individual farmer is unaware of the power of organization, or the present development of cooperation. We feel that in the development of our education department and the application of the study group principle, we can help farmers see the advantage of more organization and cooperation. I commend to you a further study along this line.

Let us take courage in past accomplishments and in recognition of the great need, set for ourselves goals which can be accomplished, and as I said in the beginning, personally, I have great hope in the ability of farmers to help themselves through voluntary organization and economic action.

MR. CONNICK: Please do not leave yet. Recognizing the fact that in all matters relating to farm interests we old folks will have to turn over sooner or later the whole thing to the younger generation it has been the custom of this Association to present on these occasions certain medals or badges from the F.F.A., and that presentation will now take place.

## LIST OF WINNERS
## in the
## MARYLAND FARM BUREAU—F. F. A. PROJECT CONTESTS
## 1936-1937

(Awards made at State Farm Bureau Meeting at Lord Baltimore Hotel, Thursday, January 13, 1938, at 4.00 P. M.)

| *Project* | *Rank* | *Contestant* | *High School* | *Award* |
|---|---|---|---|---|
| Corn: | First | Francis Jameson Schultz | Hughesville | Gold F.F.A. Medal |
| | Second | Junior Frazee | Friendsville | Silver " " |
| | Third | Robert E. Klein | Frederick | Bronze " " |
| Dairy: | First | Billy King | Gaithersburg | Gold F.F.A. Medal |
| | Second | Walter Groomes | Sherwood | Silver " " |
| | Third | Wilbur Thomas | Friendsville | Bronze " " |
| Miscell. Crops: | First | Charles J. MacCartee, Jr. | Clarksville | Gold F.F.A. Medal |
| | Second | Russell Gibson | Calvert | Silver " " |
| | Third | Webster G. MacCartee | Clarksville | Bronze " " |
| Miscell. Livestock: | First | Chauncey Crum | Walkersville | Gold F.F.A. Medal |
| | Second | Ralph V. Baker | Oakland | Silver " " |
| | Third | Russell Roberts | Gaithersburg | Bronze " " |
| Miscell. Truck: | First | John Dattilio | Smithsburg | Gold F.F.A. Medal |
| | Second | Jack Thompson | Sherwood | Silver " " |
| | Third | Charles L. Willard | Smithsburg | Bronze " " |
| Potato: | First | Ralph V. Baker | Oakland | Gold F.F.A. Medal |
| | Second | Wilbur Thomas | Friendsville | Silver " " |
| | Third | Warren Seibel | Sherwood | Bronze " " |
| Poultry: | First | Clark Nicholson | Poolesville | Gold F.F.A. Medal |
| | Second | Richard E. Cook | Frederick | Silver " " |
| | Third | Warren Johnson | Hughesville | Bronze " " |
| Sweet Corn: | First | Randolph Cissel | Sherwood | Gold F.F.A. Medal |
| | Second | Edward Dunn | Sherwood | Silver " " |
| | Third | Edgar Myers | Smithsburg | Bronze " " |
| Swine: | First | Rodney Earle Wood | Poolesville | Gold F.F.A. Medal |
| | Second | Calvin M. Murray | Lisbon | Silver " " |
| | Third | Paul B. Clay | Frederick | Bronze " " |
| Tobacco: | First | Edward Jackson | Hughesville | Gold F.F.A. Medal |
| | Second | Benjamin Laveille Hance | Calvert | Silver " " |
| | Third | Dick Cusick | Hughesville | Bronze " " |
| Tomato: | First | Jackie Bradshaw | Vienna | Gold F.F.A. Medal |
| | Second | Donald Sensenbaugh | Smithsburg | Silver " " |
| | Third | John Dattilio | Smithsburg | Bronze " " |

Adjourned 4.30 P. M.

## BANQUET—6.00 P. M.

## DEALING IN FUTURES

By J. O. Christianson
University of Minnesota

Members of the Maryland Farm Bureau Federation:

I am always happy, when I see the women folks present at a Farm Bureau meeting. It was in the old days that the men represented the family organization. It was in those good old days that the men would go to town and tell how many cows they were milking; how many ducks and chickens they were raising, and what condition the turkeys were in; but it was the women-folks and the children who stayed at home keeping the place going. There wasn't so much to be done, of course, but one might enumerate a few of the things that fell to the lot of the women of the family, such as getting the cattle back from the pasture, patching the line-fence when they broke out, putting them in the stalls, getting hay and feed for the mangers, bedding them down with straw, feeding the chickens, gathering the eggs, and, incidentally, cleaning the hen-house occasionally; milking the cows twice a day, washing the milk pails, separating the cream and churning the butter; driving the cows again to the pasture, and on the return trip bringing up the other livestock; doing the chores around the barnyard, and then in their spare time caring for the house, cooking the meals, washing the clothes, baking the batch of bread—I see that you know what I mean!

It was in that kind of a farm community where the man always represented the family organization that one morning a tornado struck the homestead, and after an agonizing moment the top of the house was ripped off and the contents flew in all directions. The bed in which the husband and wife were sleeping was picked up by the wind and carried into the south forty, where it was deposited right-side-up with the occupants no worse for the experience. In fact, the whole thing occurred so miraculously that not even the bed-clothing was disturbed. After a moment Mary wakened, looked about her in astonishment, and then began crying. John tried to quiet her, but she continued to cry quietly. He tried to reassure her with "Don't cry, Mary! Everything's all right! We're not hurt!" but his consolation seemed to not affect her. He then said "Mary, why do you cry?" and she replied "John, I don't feel bad; I'm crying because I'm happy! This is the first time we have been away from home together in fourteen years!"

In looking over your program, with its list of dignitaries passing in review before you, each bringing his message and telling his story, it makes me feel somewhat like the fabled oyster at the church supper. The

second oyster looked intently into the eye of the other and said, "What am I doing here, if you are here?"

I appreciate the introduction of your chairman. Believe me, he's a good chairman! In fact, he has all of the qualities and attributes that a good chairman needs—making his introduction brief and promising you nothing in particular, as you noticed he did. The fact of the matter is, I like to be introduced in that way; it gives me no handicap—I have nothing in particular to live up to. Something like the Swede minister, who had a hard time getting his people to come to church on Sunday. It was in the good old days when it was more difficult to get people to come to church!! Of course, today everybody goes to church!! Church services today are fully attended on Sundays!! But in those days they didn't go to church as they should, and this Swede minister out there on the Dakota prairies had to do something to get them to come, and so on Sunday morning he got up on the platform—By the way, are there any Swedish people in this audience? Hold up your hands! How many are Swedes? Ah yes! How many are Norwegians? All right! Thank you! So, as I was saying, this Norwegian minister couldn't get these people to come to church—so he got up in the pulpit that Sunday morning and said, "Ladies and gentlemen, next Sunday morning ve vill haf a special program; ve vill haf a piccolo solo", and so the next Sunday morning a big crowd came to the service to hear the piccolo solo. After the special number had been rendered a big, two-fisted, raw-boned Norwegian got up in the rear and in a slow manner said, "Mr. Minister, vill somebody t'row dat blame-fool out?" Of course, such an interruption of the service was unbecoming conduct for any church, and the pastor got up and in an indignant manner asked "Who in this congregation is so rude as to call our piccolo player a blame-fool?" to which the big Norwegian replied, "Mr. Minister, the question is not who is so rude as to call that piccolo player a blame-fool, but who is so foolish as to call that blame-fool a piccolo player?" And sometimes when I am introduced with a great deal of promise, I am afraid that somebody will inquire " . . . who is so foolish as to call that blame-fool a piccolo player?"

The only consolation I have for you, in view of the four or five hours which this talk requires, is that there is a train leaving for home this afternoon and I must try to take it.

The story is told of a Swedish family in Minnesota that always had the coffee-pot on the stove. A visitor in the home inquired of Sven "How much coffee do you drink a day?" and he replied "I don't know, maybe 18 or 20 cups a day." The visitor commented "That's an awful lot of coffee to drink in a day; don't it keep you awake at night?" and Sven replied "Oh, yah, it helps all right!"

Putting all joking aside, however—and we are better men if we indulge in a degree of humor and philosophy—and speaking specifically regarding your fine convention here, and without in any manner whatever disparaging the contributions which have been brought, or will be brought in the future, by speakers, yet I feel that the greatest benefit of

your convention is not what one speaker may say, but more particularly the spirit and the enthusiasm and the opportunity of you people to reaffirm your faith in yourselves and to pledge yourselves again to that ideal of farm life and farm organization which is eventually to give to our young people, our boys and our girls, in Maryland and in Minnesota and throughout this nation, opportunities to lead better and more successful farm lives. And to that end we should rededicate ourselves, for no finer ideal can any people have than the welfare of their children. That is why you are meeting in conventions like this today; that is why we in Minnesota are gathering together to consider these vital problems.

Leaders in Minnesota fifty years ago established the School of Agriculture as a part of our university. This school is open to any farm boy or farm girl 17 years of age or over who wishes an education in agriculture. Anybody may come to our agricultural school and take training. Understand, this is not a college of agriculture; it is not a degree course; but it is a practical folk school like the schools of Denmark, after which it is patterned, and we have there right now 500 fine farm young people, of an average age of twenty or twenty-one. Do they have to have a high school diploma? No! Do they have to have any scholastic rating? No! From one-third to half of them have had high school training; about one-half of them have had only a grade-school education. It is their opportunity to come up there and get acquainted with the leaders in agricultural life; to learn the fudamentals of an agricultural education, and to then go back to the farm and practice the philosophy of living and working together, because that is the objective of that school. I wish that you here in Maryland had something like it. If you don't you should have!

These students come to learn the practical things of farm living and not attend classes for four years to get a degree. And I say that without any desire to disparage the value of a degree or of higher education. This School of Agriculture was created for a purpose; to supply a need. That is why I believe your organization and this convention is of value, because through these contacts you may rededicate yourselves to the ideal's of your boys and girls—yours and ours—all of these young folks who are growing up here together throughout this great nation. And because of this program I say you may hold your heads high, because in this great agricultural program throughout the United States you are building not only for agrciulture alone, but, as the history of civilization tells us, by building a more permanent and prosperous agriculture you are building for the permanency of civilization itself. And this nation which we all so dearly love will in its final analysis depend for its existence upon a permanent and a prosperous agriculture. And so, when you are building a program for a better agriculture, remember that you are building not only for agriculture alone but you are building for the welfare of the entire nation. Keep your faith in the human element! Hold high the torch of your ideals!

This is your twenty-second convention. For 22 years you have had a

Farm Bureau, and I want to pay tribute to the pioneers of this organization who in the early days had the courage and the vision and the foresight to go out and work and build this organization when there wasn't much glory in it; there wasn't much spotlight in it. But yet they had the courage to stand by their guns, for they at that time had some neighbors who said then, as some do now, "It would be better if Old Man So-and-so would stay at home and take care of his farm! And yet these people gave of their time, and they are still doing it, and you are doing it. The day of the pioneer is not past! When we talk about the pioneers it is well to remember that you folks today are still pioneering. Times change, our problems change, conditions change, and we need constantly to revise our methods. We need the courage of the pioneer! That courage may be of value to every one of your local communities. Those who serve on the local committees here and there down the line are all contributing to a permanent and a better agriculture.

For twenty-two years you have gone down the line until today you are gathered in this huge assembly as representing organized agriculture here in the state of Maryland. Think back over those twenty-two years! Think of the things that have taken place in that time. Twenty-two years ago was the World War.

Passing in review before us on the stage of Time during that period of twenty-two years has been the birth of Fascism, of Nazi-ism, of Bolshevism—the dictatorships of Mussolini, of Hitler and of Stalin; during that period has come the repudiation of debts owed by the warring nations to this country, with the exception only of little Finland; we have seen the growth of the gangster—Capone, Dillinger, Pretty Boy Floyd, and many others; before us have passed in review The Duke, Wally Simpson, the glorious flight of Lindbergh; there has been the Depression, the NRA, the AAA, the TVA, the CCC, the New Deal, the Old Deal, the Return to Normalcy, the Gold Standard; the Sit-down Strikes, John L. Lewis; Wilson, the teacher and dreamer, and the venture of the League of Nations and the World Court. All of these have come to the center of the stage and passed in review before us within that twenty-two year period—many of them for a time, some for only a short time, and then have gone back into the wings and obscurity,—all in twenty-two brief years.

And today, as we turn to view the scene, we are confronted with the entire world in a condition of turmoil. Today all the world is arming to a greater extent than in 1914 before the Bloody World War. Today the world is better prepared for war than ever before, and a general conflagration seems impending. We haven't learned much in those twenty years about how best to live together, or how to get along together. What did the World War contribute to us? What did it bring us? The World War broke down all sense of moral values, a disrespect for law. Nations set the pace in outlawing war, in setting up unilateral treaties, in restricting the building of battleships; but at the same time the

nations were setting the pace in repudiating honest obligations. The governments of the world set the pace, not individuals.

The most hopeful sign of the present day is that this whole situation throughout the entire world is a man-made situation,—it has not been brought about by the wrath of the gods, or by witchcraft, but by man himself, through his own greed and stubbornness and his own jealousy and hatred. The battle lines are group against group and individual against individual, so that it should be within the power of mankind to remedy those things which he himself has brought about.

While in Washington, D. C., I stopped in for a visit with my friend and your friend, the defender of agriculture, Chester Davis, and had a most delightful time. Chester Davis, as you know, is now on the Federal Reserve Board, and it was there in that beautiful marble Federal Reserve building, one of the finest in all Washington, that I met him. Chester Davis as a member of the Monetary Supreme Court sits in judgment on the financial affairs of the nation, and as I came into the building, right at the entrance, I noticed a bronze plaque containing an inscription taken from the inaugural address of Woodrow Wilson, the founder of the Federal Reserve bank, and I read this slowly because there are people in this country who would like to do things in a way different from that indicated in this statement.

Wilson in that inaugural address said this:

> "We shall deal with our economic system as it is, and as it may be modified, not as it might be if we had a clean sheet of paper to write upon; and step by step we will make it what it should be."

Do you get the significance of that?

> "We shall deal with it as it is . . . and as it may be modified . . . and step by step we will make it what it should be."

You know, folks, we have worshipped at the shrine of materialism, cleverness and cunning; we have thought that it would be good to be a little smarter than the other fellow and beat him at his own game. But nothing comes of all that but more strife and worries and difficulties.

This nation has come through three distinct periods in its national development and progress. The first was the period of colonization during the establishment of this nation; the second was the westward expansion, when we plowed the prairies and journeyed westward to the Pacific; and the third was the economic development, when we became the strongest nation in the material wealth that the world has ever known.

We are now just at the threshhold of the fourth period in our national development, and that is the period of human relationships—of learning how to get along together, how to live together, how to make use of all these advantages that science has brought to us, in the interest of the greatest good to the greatest number of people. That is what all science and all education and all advancement should finally serve. These problems of agriculture are as old as history. All through civilization

the agricultural problem has risen to confront the intelligence and to challenge the thought of the day, and each civilization or government in its period has tried to find a solution. Had I time I could relate to you six great civilizations before ours which studied that problem, and each one tried to solve the problem; and then after a period of ascendency they started down the hill and finally that period simply became a matter of historical record about which our children may read, commit to memory many dates, record on examination papers and eventually get their diplomas. And that's about all that they have contributed.

I don't have time to give all these illustrations, but wish particularly to emphasize two:

In China, 1100 years before Christ there was invoked a Triple-A program for the control of agricultural production. A plan was worked out similar to some of the provisions of the Agricultural Adjustment Act, and history relates that it failed to work, although it helped for a time.

In Rome during the fourth century, after a depression lasting about a hundred years, some of the up-and-coming young people said there must be something done about it, and when Diocletian became emperor he said, "I will set the prices for all commodities and services in the Roman empire", and he did. They numbered about 800 commodities all together, while today we have over 2,000 legitimate ways of making a living, and all of the other ways have not been catalogued. And he put a price upon all of the commodities and services, and to enforce these prices he set not a fine of $500 for their violation, but he said "Any one who violates this executive order shall be beheaded!" They figured that would solve the problem so far as the offenders were concerned and, by the process of elimination, every one remaining would be law-abiding citizens; but it didn't work out and they had to quit because there was danger of the entire Roman empire becoming extinct.

Now, do not assume that these programs failed because they were unsound or unworkable. They failed particularly because they were given to an illiterate, unorganized rural citizenry who were unable to participate intelligently in the program of which they were supposed to be a part.

The success of an agricultural program, the success of our nation itself, in the final analysis, depends not upon the leadership alone, but it depends finally upon the intelligent participation of the people who make up that government or that program, or whatever it may be. Therefore, these programs depend for their success upon an understanding of an organized group, such as you represent here today. And so I repeat, these programs, governmental or organization, do not of themselves fail; it is the people finally who fail. I hope the time will come when the government of these United States may truly act as an umpire, and not find it necessary to place you on one side and the other fellow on the other side; but act as an umpire so that finally some day agriculture may set up its own establishment and its own organization.

The need of intelligent participation means there must be factual information; that you must understand the facts first. The channels of information have greatly increased the past few decades. It is possible to bring information of a specific type to our people from coast to coast in a very few moments through means of radio, newspapers and telephoto; but it must be remembered at this time that the channels of misinformation have also increased and it is possible to spread propaganda in just as quick time. You know, propaganda is sometimes awfully difficult to actually locate—something like a statement heard a year or so ago about world trade balances and the condition of imports and exports. As that information was published it didn't look right to me, and because I am particularly interested in that field I made an investigation and found that the figures used were entirely correct insofar as they went, but the sponsors of that information didn't go far enough —they left out most of the picture, which changed the entire impression given.

A like impression might be gotten from the story of Paul Bunyon. Maybe you don't know Paul Bunyon. He is a fabled character of the north country who did great things in a big way—the teller of big tales. For instance, Paul went out into North Dakota and logged off all the forests and then took a big mall and drove all the stumps into the ground so that the country could be cultivated.

On another occasion he hired a gang of a hundred men to build a gigantic gate for him, and as cooks for this gang of men he hired two women. Things went along all right for a time, but eventually one of the men became particularly fond of one of the women and they were married. Great objection was raised to this, but this fellow was just an ordinary lumberjack and not a king, and he felt that he could marry anybody he wanted to, but he was fired out of the camp anyway. He felt very sore about things and in retaliation he started to tell how bad the camp was and how conditions were in a terrible shape. You sometimes find folks in your own organization who don't like the way things are going and they tell how bad they are. Well, this fellow started telling these stories. He said there were conditions so bad in the camp that one per cent of the men married fifty per cent of the women. As far as percentages go he was entirely right, but it gave a rather distorted picture of the thing as it really was.

Throughout the entire world today there are four types of government. The first is where the ignorant rule the ignorant. That is tyranny. The second is where the ignorant rule the wise, and that is but a prelude to revolution. The third is where the wise rule the ignorant, and that is a dictatorship,—possibly a benevolent autocracy, possibly a ruthless autocracy, but nevertheless a dictatorship. The fourth is where the wise rule the wise, and that is democracy, but its one hope is that both groups be wise. When one group ceases to be wise, they fall into one of the other relationships. The relationship of man to man is more fundamental in the final analysis than even the form of government.

In the minds of some folks the great problem in the United States today is to learn more, to bring about greater efficiency in manufacture, to produce in greater volume, to travel over greater areas at greater speed, and so on; but actually the basic problem confronting the people of the United States today is just the small one of learning how to live together. Perhaps some of you will not be especially impressed by my opinions because I do not bring to you any statistical information or any magic formula by means of which miraculous results may be accomplished. My formula for the bringing about of a better world in which to live is to return to those old-fashioned fundamental values which have been proven basic to the life of the family, which reflect on the organization and finally on the nation itself. Any group of people, any nation or organization that believes that it can long grow and prosper contrary to Christian principles—the relationship of man to man, is living in a paradise of fools,—what may eventually become an asylum of mad men.

Agriculture, industry and labor will all have to learn to live together within themselves, their own groups, and then they will have to learn to cooperate with each other. The problems of agriculture are not alone on the farms of this country. The problems of agriculture are fully as much in the areas of industry, in the ranks of labor, and in the dwellers of the cities, because what affects any one of those groups vitally affects the welfare of other people—it is a matter of attitudes upon the part of the people,—we finally become just about what we want to become. In fact, in your own local communities you as an individual will become pretty much what you want to become.

Maybe you have heard the story of the old farmer who looked out of the window and saw that the snow was blowing the roads full of drifts, and he turned to his wife and said "Mary, I don't believe I can drive the car to town today. I believe I'll go over to Peterson's and see if I can borrow his cutter." And Mary said "Maybe Peterson won't want to loan that cutter!" and, she continued, "I heard say he wouldn't loan it." And he said "Oh, sure, Peterson will loan the cutter to me; he borrowed our corn planter, I'm sure he'll let me have the cutter." And he was talking to himself in that manner as he left the house and started across the field for Peterson's; but as he walked along he got to thinking that the women-folks were usually right about such things and maybe Peterson wouldn't loan him the cutter, and then a sort of intuition came to him that relations between him and Peterson might not be as good as he had thought; and as he pursued that thought he said to himself that it would be a low-down trick if Peterson wouldn't let him have that cutter, but, said his old self, "Sure he'll let me have the cutter"; and then he thought "But suppose he won't let me have the cutter, what then?" and the mere possibility of that made him sore all over. By this time he had reached the home of his neighbor and he went to the door and rapped, and a moment later the door opened and Peterson stood there smiling at him in a friendly way, and before Peterson could say a word he blustered out "You can keep your blamed old cutter, I don't want it anyway!"

You know, the position in which we find ourselves is the result of our own attitudes. We go along and imagine things and think things about our neighbors and persons in our local organization and get ourselves in a frame of mind that is anything but cordial, and the first thing we know we are in the same position as this old farmer who felt that the refusal to loan the cutter had already been given.

The story is told that Leonardo da Vinci during the time that he was painting that wonderful masterpiece The Last Supper—and the next time you see that picture take note of it closely—spent much time to find a man with the right sort of face to pose for the Christ—fine, clean, wholesome, noble and holy, and when finally found he painted that figure with all the care and skill of a master. From time to time during the years he spent on this painting he selected models for the various apostles, and finally came to the last character, Judas Iscariot, whose characteristics should be represented as exactly opposite to that of the Christ. After months of search he finally found the face that he wanted, and as he painted that face with its weak, dissolute features he thought he recognized something familiar in the background, and on investigation learned that his present Judas Iscariot and his former Christ were one and the same man.

A change in the attitude and living of an individual reflects itself in hs very appearance, and the same thing, my friends, can come over the attitude and appearance of an entire nation. America will finally become just what she wants to become. It is no accident that in the past five years in this country the expenditures for churches, schools and scholarships has decreased thirty per cent, while expenditures for beer, whiskey and automobiles has increased three hundred per cent—just a little difference in values. America will become what she wants to become! If we are going to worship at the shrine of all that is cheap and tawdry, we will finally become that kind of a people, but I don't believe we will! I don't believe we are going to worship at that shrine! In fact, from the attitude of men in public life today, men who are leaders, with whom I have talked, I feel, friends, that we are coming fast to the threshhold of what might be called a Spiritual Rennaisance, as Mr. Cordell Hull said in his speech a few weeks ago. The great problem before the people of the world today is not a materialistic problem, but one much greater and deeper, it is spiritual and moral. We have too long worshipped at the shrine of smartness and cleverness. We thought we were so all-fired smart that we could figure it all out and put it on a statistical chart; and all the while we have been trying to be smart, crime has been increasing in this country until the average per year for the past five years has been twelve thousand murders committed, and one and a half million major crimes, over twenty per cent of which have been committed by young folks not yet old enough to vote.

Do you blame that onto the youth of this country? They didn't build the roads they are traveling today—they were built by the older people. And in directing these young people in the paths they should follow, we

as adults must use some common sense and gumption ourselves. If I could bring all of your young folks before you here today from this great state of Maryland, they would stand here and say:

> "We are the future and in us lies—what through the ages this land shall be; yet what we are is what you are to us—We are the question to which you make reply."

What the youth of this nation will be is no more nor less than what we are to them! We need to make law-observance the political religion of our land, and to recognize that the home and the church are the most important educational institutions known to man, because therein are taught the ideals that are basic to all happiness in the home and in the community, and, finally, in the nation. That mother out somewhere on the plains of Maryland, and of other states, who tonight will be teaching her little boy or girl the difference between right and wrong will be contributing more to the building of a great civilization than that demagogue for whom thoughtless multitudes may applaud.

Have faith in fundamental truth! Let us not be ashamed to recognize the value of religion, of the home, and a few of the old-fashioned truths that time has shown to be basic. You say "What has that to do with the farm organization?" Why talk about that at the annual meeting of the Maryland Farm Bureau Federation? I talked about that at the national meeting of the American Farm Bureau in Chicago in December, and I shall continue to preach this gospel up and down this land, because after twenty years in education I am convinced that we cannot depend just upon smartness alone; but there will have to be some objective toward which all of this smartness and cleverness must be directed. Shall it be man against man, a philosophy which is disruptive of families, of groups and of nations, or shall it be directed in the interest of life and love, and living together in peace and harmony? That's the question! And the result depends upon the way we are headed.

What way are we headed? What is the objective in your home? What are you driving toward? I said more or less facetiously a while ago that today all of you folks go to church on Sunday with your children, and you recall your reaction. Our great problem is to recognize what fundamental values are, and remember these young people are saying to us "What we are is what you are to us!" We must learn to utilize God-given resources of this country in the interest of the greatest good to the greatest number of people.

There is a danger in this community and in this state, and that is the danger of extremism—where a great number of people go to an extreme in one direction and then turn and go in the other. For many years the American people have cherished the idea of building the finest, largest, most impressive thing of its kind in the country, whether it be a state capitol, a school, a park, or whatever it is. We have always wanted to go to an extreme. That was the trouble with the Prohibition movement. We tried to make the country as dry as the desert by congressional edict, —it was never really tried very much, but after a while it was thought

that something else would work better and would be easier, so we opened all of the spigots in the land and put booze-joints and taverns on almost every cross-road from coast to coast; and now we wonder why that doesn't work. There is danger in extremism! We have to learn some degree of tolerance, a somewhat middle-of-the-road policy, and to understand that no one group or individual has a monopoly upon all that is good nor upon all that is bad. We will have to learn that there is a ditch on both sides of the road, and as you drive down the highway of life you may crash into the ditch on either side with equally disastrous results.

Some months ago at our school we had a Mr. Hedberg of Sweden address our agricultural students, and the burden of his message was the virtue of the cooperative movement as instituted in his own country. The question was asked if they taught cooperation as a subject in their schools, and Mr. Hedberg replied: "We do not teach it as a subject, but we teach the fundamental values which make cooperation the natural result—that is, decency and cooperation in understanding the relationships of man to man." And he continued further, "When we build our farm organizations in Sweden, we build them independently", and he straightened up and his blue eyes sparkled as he said "We made ourselves independent of bankers or of any financial group; we didn't borrow money from anybody, we raised the money by nickels and dimes and dollars throughout our farm population until we are now subservient to nobody!" I thought that was one of the finest expressions I had ever heard. And if I leave any thought or idea in the field of economic organization in your mind today, I would choose that it be that one idea, that you build yourselves financially sound from among your own group. Do not try to expand too far or too quickly, but build as you can providently so that you are not under obligation to anyone, but keep your whole set-up under your own control.

I said a moment ago that no one has a monopoly on all that is good or bad. We have made great progress in the physical sciences. We can travel great distances in comparatively short time. Nations are as close together today as states used to be; and states are as close to each other as townships used to be; yet we have made practically no progress whatever in the field of human relationships, or learning how to live together and get along together harmoniously. We have been going down the highway of life lickety-whistle—going somewhere, but where we don't know. And now, if the gas holds out, we will be returning home, and when we get home we will find that the home is the most important institution in the development of great people.

When I think of home I remember back to the days of a low-ceilinged kitchen out on the prairies of Dakota where on a cold winter morning snow would have sifted in through the cracks here and there, and mother would be standing at the old stove baking pancakes—the kitchen would be full of smoke, but we children were full of pancakes; and that home lived and taught ideals that I wouldn't trade for any home I have

ever seen or ever known, because those ideals meant more to me than any inheritance that I might otherwise get.

I am talking of the importance of building your local units in this great civilization so that it may persist and withstand the onslaughts that are working for its destruction. And if the gas holds out we will be coming home to that home to which you used to visit on Sunday—the day of the old red-checkered table cloth and the heavy China dishes.

It's all right to be smart; it's all right to know things. I am not criticizing education—we need education, and I don't want to criticize it in any way, but let's remember that education is not confined to public schools or colleges, or to high-schools and universities alone. Education is being carried on at the cross-roads, in your village store, around your home table, out there in that booze-joint, at the gambling table. That is a part of your educational machinery, because it is the school of the public, a part of the set-up wherein your young people are learning the ideals that will be a part of their equipment in adulthood.

The problem confronting us today is the simple old-fashioned one of learning to live together. I wish I could picture to you the story of that little girl out in the Montana wheat field who one day wandered away from the home and became lost among a thousand acres of wheat. Frantic search was made for her, but she was shorter in height than the grain and they couldn't find her. Neighbors came from far and wide to help in the search, but without success. After several days of random search some one suggested "Let's line up on one side of the field, join hands, and march across the entire field, even though we trample it all down in the search", and about half way across the field they came upon the lifeless body of the child, and the father said "Why, oh why, didn't we join hands long, long ago?"

We are living today in the greatest country in the world. I am proud to be an American citizen. I am proud of my mother and father for choosing this country as a land of their citizenship, and I hope that we may continue with the same opportunities for our young people that have prevailed through the years; but we will do it only by joining hands with our own groups and with all of the organized groups, of Labor and industry and agriculture, in the interest of the ideal of serving the greatest good for the greatest number of people in America.

What have we to fear? Lincoln asked that question back in 1857 when the states were threatened with disruption, and he answered that question in this way: "If a military giant with all of the war-chests of Asia and Africa and Europe combined were to come over here, he couldn't by force take a drink from the Ohio or make a trail in the Blue Ridge in a trial of a thousand years." And then he went on to say: "What, then, have we to fear? If destruction ever be our lot, it must come from amongst us." We will finally become just what we want to become.

If I leave no other thought with this great gathering today than the importance of our own family relationships—mother and dad and the boys and girls—remember the part that each of you played as teachers

in your homes and communities, I will feel that my time in coming to Baltimore has been very well spent. The problems that concern us are problems of home relationships, and I believe if we can apply to those issues some of the fairness and study that in time past has transformed alchemy into chemistry, astrology into astronomy, blood-letting into modern surgery, we may some day transform the forces of hatred and greed into a power that will serve the greatest good for the greatest number of people. Thank you!

## FRIDAY, JANUARY 14

### Business Session

Mr. Nuttle presiding called meeting to order 9.50 A. M.

MR. NUTTLE: We were supposed to have some songs now, but our leader is not here. I would like to tell you something on Bill McKnight. Out in Chicago, at the end of the Convention they asked the song leaders from each State to lead the Convention in song, and Bill got up there, and really put it over. The young song leader from California was so pleased, he rubbed Bill's bald head, and said "I hope I have as much pep as he has when I am as old as he is." It seems this morning that pep is burned out. I had hoped to tell that story on him while he was present.

The meeting will come to order now, and we will have the reading of the official call by the Secretary, Mr. Wise.

Secretary Wise read the following call:

December 20, 1937

To County Secretaries and
Affiliate and Associate Secretaries

### NOTICE OF ANNUAL MEETING OF MEMBERS OF MARYLAND FARM BUREAU, INC.

Dear Sir:

Official notice is hereby given you that the Board of Directors of the Maryland Farm Bureau, Inc., has authorized the calling of the next annual meeting of the Corporation for January 13 and 14, 1938, Lord Baltimore Hotel, Baltimore, Maryland; the meeting to continue from day to day until all business that may come before the meeting has been properly disposed of. All sessions of the annual meeting will be held in the Ballroom of the Lord Baltimore Hotel.

We quote the following from By-Laws of Maryland Farm Bureau, Inc.: Article II (By-Laws Maryland Farm Bureau, Inc.) Representatives at

Annual or Special Convention.

Section 1. *Delegates*: Each member in good standing shall, in addi-

tion to its duly authorized directors, be entitled to one voting delegate for every fifty (50) members, in good standing, or multiple thereof, based on the official records of the Corporation as of December 31 preceding, to represent said member at any annual or special meeting of this Corporation.

Each associate or affiliate member in good standing in this Corporation shall be entitled to two delegates for each five hundred (500) members or multiple thereof; but in no case shall it be entitled to more than three (3) such delegates; this representation shall be based on membership actually paying annual dues into the treasury or based on contracts with said associate member.

Said delegates shall be actually engaged in farming and duly selected and designated by their respective organizations. In no case shall a county agent be selected as a delegate.

Blanks are enclosed for you to submit the credentials of your directors and delegates for this meeting.

Very truly yours,

C. E. WISE, JR.,
*Secretary-Treasurer*

CEW:MD
Enc.

MR. NUTTLE: We will now have the roll call of the voting delegates by the Chairman of the Credentials Committee, Mr. Wilbert Smith.

Mr. Smith presented the report and called the roll, and announced that a quorum was present.

## DELEGATES SEATED AT MEETING OF FARM BUREAU, INC., ON JANUARY 14, 1938

*Anne Arundel County*—O. F. Grimes, Arthur Jones; *Baltimore County*—P. C. Turner, Ridgely Todd, T. C. Sherrill, Ross Pearce, T. A. Mann, Mrs. Olive Fowble, T. B. Todd, Jr., P. O. Bortner, Lawrence E. Ensor, W. T. Allen; *Calvert County*—J. Ellis Bowen, Wm. P. Norfolk, Calvert C. Buckler; *Caroline County*—Linwood O. Jarrell, Byron Poore, Kennard Shultz, F. D. Zeigler, C. J. Kern, O. M. Dulin, Norman Taylor, Nicolas Laigneil, Edmond Neal, Wingate Neal, E. H. E. Theiroff; *Carroll County*—John S. Bushey, R. P. Buckman, Guy Carlisle; *Cecil County*—D. B. McDowell, R. G. MacDonald; *Charles County*—Samuel C. Linton, F. B. Bolton, L. A. Starkweather, George A. Carpenter; *Dorchester County*—A. K. Austin, S. W. Linthicum, Reginald A. Jones; *Frederick County*—Alvie M. Etzler, Walter L. Hipkins, H. L. Davis, D. J. Thomas, Ira D. Ifert, T. S. Anderson, Willis E. Derr, Harry Keller, Notley Davis, Albert Mercer, Clyde Smith, Howard Smith, Thomas P. Culler, James V. Shaff; *Harford County*—Fred C. Jones, A. G. Ensor, Walter S. Spencer, Gladden Davis, Charles Davis, Wilson Heaps; *Howard County*—Roby H. Mullinix, H. J. Baker, H. T. Musgrove; *Kent County*—H. S. Leaverton,

H. T. Williams, H. S. Ford, L. A. Sutton, Harper Carter; *Montgomery County*—J. W. Jones, Ulysses Griffith 4th, Granville J. Thompson, Wilson Poole; *Prince Georges County*—W. R. C. Connick, Wm. E. Duvall, H. W. Townshend, Ernest D. Fingang, Paul Summers, Thomas E. Berry, E. C. Trueman; *Queen Anne County*—J. W. Smith, B. P. Stafford, Charles I. Boyle, C. T. Bishop, Earle T. Bishop; *Somerset County*—M. F. Carver, Harry Keenan, Edw. DeMar, Miles Lankford; *St. Mary's County*—Grenville Lewis, Bernard Goodwin; *Talbot County*—Francis G. Shillinger, Wm. E. Sanger, J. F. Baker, A. Boley; *Washington County*—R. C. F. Weagley, Allan B. Seibert, Clarence B. Mason, John J. Flook; *Wicomico County*—C. C. Phillips, Edgar Williams, Robt. Clelland, Elmer Hobbs, Chas. Wright, Olin T. Elzy; *Worcester County*—Ralph Shockley, Clarence E. Baker, Rodney Bounds; *State Home and Community Chairman*—Mrs. R. C. F. Weagley; *Maryland State Poultry Council*—J. W. Snoddy, Mrs. W. W. Hopkins; *Maryland Co-operative Milk Producers, Inc.*—I. W. Heaps, F. F. Hering, R. G. Spoerlein, D. S. Pearce; *Maryland State Horticultural Society*—H. C. Whiteford, G. Rust Canby; *Maryland Vegetable Growers Association*—Joshua Lynch, R. T. Merritt; *Hillsboro-Queen Anne Corporation*—Charles I. Boyle, H. C. Whiteford; *Maryland Tobacco Growers Association*—Nelson Turner, Oden Sansbury, S. C. Linton, Wm. E. Duvall, Jr.; *Maryland Stockmen's Association*—J. K. Funk, Wm. J. Hines; *Maryland Beekeepers Association*—none present; *Maryland Crop Improvement Association*—none present; *Maryland Horsebreeders Association*—none present.

Thereupon some one rose in the back of the room and stated that he had not called the Home and Community Chairmen.

MR. NUTTLE: According to the new Constitution and By-Laws the Home and Community Chairmen of the Counties are no longer voting delegates in this meeting, and, therefore, they were not called this morning. Mrs. Weagley is a Director and, therefore, she has a vote.

MRS. DAVIS: They never did have a vote. I was Chairman for fourteen years, and we were never called.

MR. NUTTLE: Since there is a quorum present, we will proceed with the minutes of the last annual meeting, which will be read by the Secretary.

Mr. Wise read the minutes.

Mr. Connick moved that the minutes be approved, as amended. Mr. Bolton, of Charles County, seconded the motion, and it was carried.

Mr. Nuttle then called for the Treasurer's report, and Mr. Wise presented the report.

MR. NUTTLE: Now, we have gone over this pretty hurriedly, and I am wondering if there are any questions that you want to ask about it. If there are, just take your time. It is your money. You know these amounts sound big to a lot of us, and we want any questions that you want to put. One thought came to me,—is it necessary for this body to approve the acceptance of the Union Trust certificate,—that certificate of deposit? Everybody else has taken it.

MR. WISE: You can do that in a blanket resolution to be presented later.

MR. NUTTLE: I don't see any use in keeping that tied up if there is any chance of getting cash for it. Maybe that certificate will be worth more than par later on. Are there any other questions?

MR. BOYLE: He said something about that having to be discounted. What does that mean?

MR. WISE: That certificate will have to be discounted.

MR. BOYLE: What do you mean by discounting it?

MR. WISE: I mean we won't get full value for it; we cannot be sure we are going to get dollar for dollar out of it.

MR. NUTTLE: Did you discount the $2,000 livestock note in there? I guess that will depend upon how much livestock is sold, whether that $2,054.00 note is paid back. Mr. Jones is Secretary of that, and he says that business has improved this year, and we are getting more support from the Counties, they are shipping more cattle, sheep and hogs. The more you ship, the more that note is going to be worth.

Are there any more questions?

MR. SMITH: I move that the report be accepted and filed as presented. Mr. Boyle, of Queen Annes, seconded the motion and it was carried.

MR. NUTTLE: I will now call for the report of the Auditing Committee, Mr. Sam Linton, Chairman.

Mr. Linton presented the following report:

**Audit Committee**

Your committee appointed by the President to examine the annual audit of the Treasurer's accounts, submits the following report:

We have gone over the annual financial report item by item, with the Auditor, Mr. Wm. R. Dance, Registered Public Accountant, and find the report shows the assets of the Corporation have increased from $17,515.54 in 1936 to $19,246.12 in 1937, an increase of $1,730.58, which is very gratifying.

The Accounts Receivable are in excellent condition.

All bills due by the Corporation have been paid in full to December 31, 1937.

We wish to express our appreciation of the manner in which the books are kept and the completeness of the records in the office.

Respectfully submitted,

SAMUEL C. LINTON, *Chairman*
J. W. JONES
J. W. SMITH
FRANCIS SHILLINGER

MR. NUTTLE: This Committee really did spend some time and went into this with the Auditor; something that I think every organization should do and it has been done right.

It was moved by Mr. Griffith, of Montgomery County, that the report be accepted as read, seconded by Mr. Austin, of Dorchester County, and duly carried.

MR. NUTTLE: We have an amendment to our By-Laws, and I will ask Mr. Turner, our Vice-President, to present this to us now.

MR. TURNER: Mr. Chairman, *gentlemen,* I will read the proposed amendment to the By-Laws:

## PROPOSED AMENDMENTS TO THE BY-LAWS MARYLAND FARM BUREAU, INC.

On page 6 under Article III under title "Board of Directors—Composition," strike out all of Section 1 and insert in lieu thereof, the following:

Section 1. The Board of Directors shall consist of one Director nominated by each member having a membership of from fifty (50) to five hundred (500), and one additional Director for each additional five hundred (500) of paid-up memberships or major portion thereof based on the official records of the Corporation. The chairman of the State Home and Communtiy Committee and the Maryland member of the Board of Directors of the American Farm Bureau Federation shall be ex-officio directors of this Corporation. Past presidents of this Corporation shall be members of the Board of Directors for 5 years after expiration of the term of office.

In no case shall a county agent or home demonstration agent be eligible as a Director.

This amendment was submitted to the state office of the Maryland Farm Bureau, Inc. and referred to a Code of Regulations Committee on January 5. The committee has perfected the amendment and reports to the delegates that the intent of the amendment is in harmony with the organization's policies.

By the committee:
P. C. TURNER
WILBERT L. SMITH
C. E. WISE, JR.

I think the reason for this change is that we have now, and I hope always will have members who have been past Presidents. They are members of the American Farm Bureau, and this simply means that they won't have to be President to still hold a position on the Board. We do not want to lose the experience that they have gained. We have limited it to five years, because we do not want the Board to become too unwieldy. We have simply kept them on the Board for five years, so that we may profit by the experience they have gained while they were Presidents. I move the adoption of this amendment.

Mr. Linton seconded the motion.

MR. CONNICK: It says here "The Board of Directors shall consist of

one director nominated by each membership of from 50 to 500 of paid-up memberships or major portion thereof based on the official records of the Corporation." But nothing is said about any member having paid-up memberships of over 500. As Prince Georges expects to be over that I would like to know about that.

MR. NUTTLE: My idea is that when you get 751 members, we will give you two Directors. In other words, if you have more than one-half of 500 members, you will get an additional director.

MR. WISE: Mr. Connick has brought out something that is left out of this amendment, and it should be included. After the number "(500)" should be added "and one additional Director for each additional five hundred (500) of paid-up memberships or major portion thereof based on the official records of the corporation. The official copy will have that correction added.

The amendment was approved as corrected.

MR. NUTTLE: The thought back of the latter part of this amendment is that there is quite a sentiment in the organization for a rotation in the office of President, something that I agree with, and it just provides that in case you elect another President, I will continue on your Board. It also provides that men like Mr. Cockey who has not been President for several years will be on the Board for five years after he leaves the Presidency, and that will give him a couple more years from now. That is the purpose of this amendment to the By-Laws.

MRS. WEAGLEY: Mr. Chairman, I would like to say that in the Home and Community meeting, there was a motion made and carried that we ask that our title of Home and Community department be changed from that name to read "The Associated Women of the Maryland Farm Bureau", and I think this would be the proper time to present this, so that I would like to make this as an amendment.

MRS. DAVIS: We cannot have a Constitution and By-Laws while we are only a Committee of the Maryland Farm Bureau, and we would like to change that and be a body of our own.

MR. WISE: That is a vital step, something we should discuss more fully. I have no objection to it, but I do not think this is the time to bring it up. It would be an entirely new set-up.

MRS. WEAGLEY: We do not want a new set-up. Just instead of being a Committee we would be an affiliated organization,—it would just be a different title.

MR. WISE: I think we should consider that thoroughly before we make such a move.

MR. NUTTLE: My own feeling in the matter is that this is an entirely different set-up, and that legally we have no right to consider it because it was not in the hands of the Committee for five days.

MRS. DAVIS: The Associated Women of the National Farm Bureau was organized in Tennessee, and they have come around and asked all the women that work in Maryland what they thought about having the name changed to the Associated Women. I think it is a fine idea, then we

would be a member of the internationally associated Women of the World.

MR. WISE: I agree with the ladies that they are perfectly right if they wish to do that. Probably they would get much more spirit in their organization and help us much more. We can consider that during the year.

MR. NUTTLE: Perhaps it would be a good idea for you to go out, Mrs. Weagley, and bring in a resolution as to that.

MRS. WEAGLEY: Then, I will withdraw my motion at this time.

MR. NUTTLE: I will now ask Mr. Etzler, of Frederick County, to present the report of the Tax Committee.

Mr. Etzler read the introduction to the Tax Report as distributed, and started to read tax report printed in full.

## REPORT OF THE JOINT TAX COMMITTEE OF THE MARYLAND STATE GRANGE AND THE MARYLAND FARM BUREAU, INC., 1937-1938

### Introduction

An ever-increasing demand is generally placed upon governments. Obviously this results in an ever-increasing property tax for local governments, unless some means are devised whereby a total economy in local governments is effected in order to offset this increase in demand for services, or unless other revenues are found to supplement the local property tax.

We should scrutinize governments with the objective of determining what changes might be made that would produce economies without reducing the efficiency and effectiveness of the service. Some have suggested county consolidation; others point to the consolidation of incorporated towns with county governments; while others urge the adoption of an executive or manager form of local government.

Elimination of the state property tax is one of the desirable goals in tax legislation. All of the Maryland state property tax is now dedicated to the servicing of state bonds. Regardless of other methods that may be employed for the reduction of the state property tax, the safest policy to adopt, on the part of the State, is the gradual reduction and final elimination of the state property tax by refusing to issue any more state bonds payable out of future general property tax revenue. Therefore, this Committee favors the use of revenues other than a state property tax for servicing future state bonds.

We must also examine more carefully the use of public credit in the future so that such funds will be advantageously spent for the most permanent benefit, and the repayment of such debts will involve the least possible total interest cost. In this connection, good tax collection laws, combined with a property tax not too burdensome, could prevent the

accumulation of uncollected taxes, which create the necessity of bond issues to absorb floating indebtedness.

Good public fiscal policy requires that the units of government operate as nearly as possible on a current revenue basis. Improvements which are necessary, but which cannot be provided for in any year without undue capital levies, are properly financed over a period of years through bond issues. It is our opinion that the period of years of such financing should be confined well within the possible life of such improvements.

While the county tax rate advanced in some counties this year over previous years, in other counties the rates were decreased. Apparently, the average county tax rates will be about the same for the previous year.

At all times it is necessary to exercise the strictest economy in government and we urge upon the respective county farm groups that they analyze the anticipated expenditures in their respective counties and enlist the cooperation of public officials in the economy of such expenditures.

## Recent Tax Legislation

Relief tax legislation in 1937 changed somewhat the picture of public support of relief as it existed in the previous year. New taxes were added, while the franchise tax on business corporations was discontinued.

No change was made in the tax on beer or the tax on admissions. However, the manufacturers' tax on distilled spirits was reduced from 5 cents to 2½ cents per gallon and certain items—namely, soaps, mouth washes, dentifrices and toothpastes—were excluded from the cosmetics tax.

New tax levies were imposed upon the recording of instruments in writing, on pin-ball machines, music boxes, and the re-registration of operators of motor vehicles. In addition, a state income tax of ½ of 1 per cent on net incomes of both individuals and corporations was enacted. Table 2 shows the gross revenue from the state relief taxes in the last two fiscal years. Total collections in 1935-36 were nearly $5,000,000 whereas in 1936-37 they were about $4,000,000.

Table 1—*County Tax Rates for Maryland,*

1934-35, 1935-36, 1936-37 and 1937-38

| County | County Rates | | | |
|---|---|---|---|---|
| | 1934-35 | 1935-36 | 1936-37 | 1937-38 |
| Allegany | $1.25 | $1.42 | $1.50 | $1.55 |
| Anne Arundel* | 1.81 | 1.89 | 1.90 | ‡ |
| Baltimore* | 1.18 | 1.26 | 1.49† | 1.40 |
| Calvert | 1.10 | 1.35 | 1.70 | no data |
| Caroline | .98 | 1.08 | 1.07 | 1.23 |
| Carroll | 1.00 | 1.10 | 1.10 | 1.05 |
| Cecil | .80 | .78 | .78 | .83 |
| Charles | .90 | 1.15 | 1.10 | 1.10 |
| Dorchester | 1.00 | 1.00 | 1.22 | 1.12 |
| Frederick* | .90 | .95 | 1.00 | ‡ |
| Garrett | 1.00 | 1.00 | 1.00 | 1.00 |
| Harford* | .95 | .95 | 1.08† | ‡ |
| Howard | .95 | 1.00 | 1.15 | 1.15 |
| Kent | .84 | 1.21 | 1.20 | 1.52 |
| Montgomery | .90 | 1.50 | 1.50 | 1.50 |
| Prince George's | .99 | 1.00 | 1.28 | 1.23 |
| Queen Annes | .78 | 1.00 | .90 | .80 |
| St. Marys | .92 | 1.00 | 1.00 | 1.05 |
| Somerset | 1.00 | 1.20 | 1.20 | 1.30 |
| Talbot | .85 | .85 | .90 | 1.00 |
| Washington | .88 | .97 | 1.06 | 1.07 |
| Wicomico | .88 | 1.06 | 1.31 | 1.28 |
| Worcester | .95 | .95 | .95 | .88 |

*Counties now using calendar year as levy year.
†Calendar year 1937.
‡No rate levied as yet for 1938.
Source of Data: County levy statements.

Revenue receipts to the present time in 1937 cannot be used as an indication of the total for one year as the income tax collections have scarcely begun at this time. Estimates of a year's collections from most of the other sources of revenue appear to be reasonably comparable with the estimates prepared by this Committee and presented to the Legislature. This Committee estimated that $4,260,000 would be received annually from the relief tax act of 1937, omitting a probable $60,000 from a music box tax for which the Committee made no estimate.

It is too early to predict whether or not the tax program will be sufficient to cover relief needs without necessitating an increase in the property tax in local governmental units. It may be necessary for some of the governments to furnish temporary funds for relief needs until later revenues, especially from the income tax, are forthcoming.

Table 2—*Gross Revenue from State Relief Taxes in Maryland,*

Fiscal Years 1935-36 and 1936-37.

| Tax Source | Collections in 1935-36 | Collections in 1936-37 |
|---|---|---|
| Emergency Gross Receipts Tax | $2,629,257.12 | $ 115,706.72 |
| Auto Titling Tax | 505,856.65 | 593,986.63 |
| Inheritance Tax | 350,000.00 | 563,781.76 |
| Beer Tax | 431,944.50 | 839,956.67 |
| Distilled Spirits Tax | 382,194.42 | 665,073.50 |
| Toilet Articles and Cosmetics Tax | 115,355.50 | 255,504,23 |
| Franchise Tax on Corporations | 439,558.27 | 209,267.13 |
| Admissions Tax | 94,195.77 | 233,929.59 |
| Pin-Ball Machine Tax | ---------- | 203,635.59 |
| Music Box Tax | ---------- | 50,155.79 |
| Registration Tax | ---------- | 130,963.30 |
| Recordation Tax | ---------- | 66,601.43 |
| Income Tax | ---------- | 3,376.70 |
| Total | $4,948,362.23 | $3,931,939.04 |

Table 3—*Comparative Collections from Maryland Relief Tax Revenue Act of 1937, to Date, With Estimates of Revenue for the Year.*

| Tax Source | Collections from June to September, Inclusive 1936 | Collections from June to September, Inclusive 1937 | Estimated Collections for One Year: Based on Collections to Date | Estimated Collections for One Year: Estimates Prepared for Legislature by Farm Joint Tax Committee |
|---|---|---|---|---|
| Auto Titling Tax | $196,080.93 | $211,693.81 | $600,000 | $550,000 |
| Beer Tax | 379,211.51 | 351,032.60 | 875,000 | 825,000 |
| Distilled Spirits Tax | 297,378.43 | 131,081.07 | 400,000 | 420,000 |
| Toilet Articles and Cosmetics | 93,025.15 | 57,995.99 | 140,000 | 125,000 |
| Admissions Tax | 71,395.37 | 78,336.40 | 240,000 | 225,000 |
| Pin-Ball Machine Tax | No Tax | 203,635.59 | 225,000* | 175,000† |
| Music Box Tax | No Tax | 50,155.79 | No Estimate | No Estimate |
| Registration Tax | No Tax | 130,963.30 | 225,000‡ | 215,000‡ |
| Recording Tax | No Tax | 66,601.43 | 260,000§ | 225,000¶ |
| Income Tax | No Tax | 3,376.70 | No Estimate | 1,500,000 |

*At $35 for 5 or more cent machine and $10 for 1 cent machine.

†At $25 for 5 or more cent machine.

‡Amount available for one fiscal year; total collections estimated to be $430,000.

§At 10 cents per $100, with certain exemptions.

¶At 5 cents per $100, with no exemptions.

The following taxes and rates of tax are imposed in the relief tax program of 1937:

Tax on beer—2-7/16 cents per gallon
Tax on distilled spirits—2½ cents per gallon
Tax on admissions—1 per cent of gross receipts and a variable tax on passes
Tax on recorded instruments of writing—10 cents per $100 of consideration paid
Registration fee—One dollar per operator of motor vehicle
Pin-ball machine tax—$35 for each game or machine, excepting $10 for those played for the sum of 1 cent
Auto titling tax—1 per cent of sales value of motor vehicle
Toilet articles and cosmetics tax—10 per cent of sales
Music box tax—$15 for each machine.

## Reassessment of General Property

The 1937 Legislature postponed, for the third time, a general reassessment thorughout the State, but permitted a reassessment to be made in the following nine counties: Allegany, Anne Arundel, Caroline, Frederick, Garrett, Harford, Kent, St. Marys and Wicomico.

Studies of assessments in several counties in this State indicate that during the period of 1933-36 farm property was over-assessed as compared with urban real estate in the counties. While it is true that some increase has taken place in the value of farm property, it is likewise true that town property has also increased to some extent.

A comparison of lot properties with farm real estate in Anne Arundel County showed that 147 farms were assessed at 86 per cent of the value in 1935-36, as compared with an assesment of 76 per cent of the value in the case of 642 improved lots, and 59 per cent for 705 unimproved lots. In Montgomery County, assessments on 141 farms were 91 per cent of the sales value, whereas 915 suburban properties, mostly residential, were assessed at about 56 per cent of sales value.

Several counties have already completed or started a reassessment. In most of these counties the facts collected for 1933-35 indicate that a reassessment was advisable. Other counties in which a reassessment was not permitted also appear to be in need of a reassessment. Table 4 shows the assessed value expressed as a per cent of sales value in several of the counties for the period 1933-35.

Inequalities have arisen since the last reassessment because of the following factors:

1. Decline in value of some farm real estate as compared with other farm real estate because of differences in productivity and use of land, or type of farming:

2. Additional road improvements without change in assessments;

3. Changes in the condition of farm buildings;

4. Relatively greater depreciation in value of property on unimproved roads;

5. A readjustment of assessments through complaint of some property owners:

6. Poor original assessments.

In addition to the inequalities of real estate assessment, a reassment seems justified on the basis of unequal assessments on personal property, and, in many instances, the entire exclusion of such property, especially livestock from the books. Under the present system in most counties, with reassessments at long intervals, it is very difficult to place upon the tax rolls all of the personal property values. Constant movement of the population, and frequent changes in personal property, mean that the tax officials must be keen observers in order to detect and assess all such property. This condition has been responsible, in many counties, for a substantial reduction in personal property assessments. It is the expectation that a reassessment will place more of the personal property on the books and thereby offset, at least in part, any reduction incurred in the assessment of real estate.

Table 4—*Comparison of Assessed and Sales Values of Farm Real Estate in Maryland,* 1933-35

| County | Number of Farm Sales | Assessed Value As Per Cent of Sales Value |
|---|---|---|
| Anne Arundel | 99 | 94 |
| Calvert | 87 | 81 |
| Caroline | 139 | 142 |
| Frederick | 142 | 121 |
| Howard | 158 | 102 |
| Montgomery* | 141 | 91 |
| Queen Annes† | 76 | 141 |
| Somerset | 80 | 101 |

*Districts 1, 2, 3, 6, 8, 9, 11 and 12.

†Districts 1, 2, 6 and 7 only.

The recent Legislature set up a precedent of local option for determining the need for a reassessment. Prior to that time, reassessments were made in a particular year in all counties. While local option is a good rule to apply if there is no need for uniformity among the counties, the fact remains that so long as we have a state property tax, it is necessary to utilize means of making the assessments comparable among the counties. Therefore, it seems wise for the State to adopt one policy or the other—that is, either eliminate the state property tax and provide for local assessments according to local needs, or establish a definite program of assessments based upon equality among the counties.

Frederick County has adopted the continuous method of assessment by a Board of Assessors, consisting of the Supervisor of Assessments and two

other members. The plan is to cover the county, district by district, over a period of years, similar to the procedure in Baltimore City. Whether or not this method will be an improvement over the old system of periodic assessments made by locally appointed assessors remains to be seen.

The last General Assembly when it postponed a general reassessment, except for the nine counties enumerated above, clarified the controversial issue regarding the power of officials to change assessments in either direction. The law now provides that existing assessments may be raised or lowered for the purpose of equalization.

It is the hope that farm real estate will be reduced in those counties now making the reassessment. In certain counties, where farms are greatly over-assessed, this may be possible, but in other counties it appears that the assessment will not produce any material reduction, but will aid in equalizing assessments.

One of the important factors in reassessing is that of effectiveness of the work. If the reassessment results in very few changes or in changes minor in extent, it is quite apparent that much unnecessary expense may be incurred. Before making a reassessment it would seem advisable for a county to discover to what extent changes were made in the last reassessment, and the probable extent of changes during the next contemplated reassessment. This should assist in determining the justification for a complete reappraisal of property, as compared with the problem of making necessary adjustments in individual assessments.

Tax maps, showing physical characteristics, relative productivity and boundaries of farm property are an asset in assessing and equalizing farm properties. Wherever it is possible, such maps should be available in the assessor's office.

## County Highways

The advisability of turning back to the counties, for maintenance and improvement, all county highways, seems to be a controversial issue. While many factors are involved in the controversy, the chief questions for consideration should be those pertaining to relative costs and services under State administration as compared with local administration.

The amount of money available to the counties from the 1½ cent gasoline tax steadily increased from about $2,000,000 in 1933-34 to $2,324,000 in 1936-37.* However, in 1937-38, the estimated amount is $1,670,000, or a decrease of approximately $650,000. Diversion of gasoline tax revenues for state debt and general fund purposes is responsibile for this reduction in allocations to the counties. Part of this reduction has been replaced by extraordinary funds allotted to the counties from the State Roads Commission fund and from bond issues. The total of these two latter sources approximates $529,000. All funds available as allotted to

*Includes funds restored through bond issue because of diversion of gasoline tax for other state purposes.

the counties for 1937-38 will total about $125,000 less than the amount available in the last fiscal year for county roads.

Based on the mileage of county roads reported as maintained in 1936, revenue accruing to the counties from the 1½ cent gasoline tax varies in 1936-37 from $170 per mile in Caroline County to $385 per mile in Charles County. The anticipated revenues for 1937-38 vary from $122 per mile in Caroline County to $280 in Charles County. The average for the State is $210 per mile for 1936-37 and $151 per mile in 1937-38. It would seem that this amount of money available per mile would be adequate in most counties for the maintenance of the road system, but it does not provide for any material improvements or payment of county road bonds.

During the fiscal year ending in 1936 only about $851,000 of the state road revenue allotted to the counties was applied to county road maintenance; $600,000 was used to pay county road debt; $34,500 went to incorporated towns; and the remainder, or about $850,000, was used for county road improvement.

Table 5—*Approximate Amounts Accruing to the County Accounts from the One and One-Half Cent Gasoline Tax* for Maintenance, Construction and Road Debt of County Roads,* 1933-1938.

| County | 1933-34 | 1934-35 | 1935-36 | Estimated 1936-37 | Estimated 1937-38 | Extraordinary Funds to Counties* | | | Grand Total in 1937-38 from All Sources |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | From State Roads Com. Main. and Reconstruction Fund | From Bond Issues | Total | |
| Allegany | $ 75,745 | $ 78,417 | $ 83,869 | $ 87,384 | $ 62,787 | $ 7,298 | $ 13,316 | $ 20,614 | $ 83,401 |
| Anne Arundel | 77,760 | 80,503 | 86,099 | 89,709 | 64,457 | 7,508 | 13,670 | 21,178 | 85,635 |
| Baltimore | 170,226 | 176,230 | 188,481 | 196,383 | 141,103 | 16,415 | 29,926 | 46,341 | 187,444 |
| Calvert | 30,620 | 31,701 | 33,904 | 35,326 | 25,382 | ---------- | 5,383 | 5,383 | 30,765 |
| Caroline | 72,321 | 74,872 | 80,077 | 83,434 | 59,948 | 6,983 | 12,714 | 19,697 | 79,645 |
| Carroll | 131,144 | 135,770 | 145,209 | 151,296 | 108,768 | 12,653 | 23,055 | 35,708 | 144,476 |
| Cecil | 87,832 | 90,931 | 97,252 | 101,329 | 72,806 | 8,470 | 15,441 | 23,911 | 96,717 |
| Charles | 74,134 | 76,749 | 82,084 | 85,525 | 61,451 | 7,158 | 13,033 | 20,191 | 81,642 |
| Dorchester | 82,796 | 85,717 | 91,676 | 95,519 | 68,631 | 7,980 | 14,556 | 22,536 | 91,167 |
| Frederick | 168,010 | 173,936 | 186,028 | 193,826 | 139,266 | 16,205 | 29,536 | 45,741 | 185,007 |
| Garrett | 106,567 | 110,326 | 117,996 | 122,943 | 88,336 | 10,273 | 18,735 | 29,008 | 117,344 |
| Harford | 108,179 | 111,995 | 119,780 | 124,802 | 89,672 | 10,448 | 19,018 | 29,466 | 119,138 |
| Howard | 58,018 | 60,064 | 64,240 | 66,933 | 48,092 | 5,600 | 10,200 | 15,800 | 63,892 |
| Kent | 57,816 | 59,856 | 64,017 | 66,700 | 47,925 | ---------- | 10,164 | 10,164 | 58,089 |
| Montgomery | 112,208 | 116,166 | 124,242 | 129,450 | 93,011 | ---------- | 19,726 | 19,726 | 112,737 |
| Prince Georges | 98,308 | 101,776 | 108,851 | 113,414 | 81,489 | 9,485 | 17,283 | 26,768 | 108,257 |
| Queen Annes | 71,313 | 73,829 | 78,961 | 82,272 | 59,113 | 6,895 | 12,537 | 19,432 | 78,545 |
| St. Marys | 62,248 | 64,444 | 68,924 | 71,813 | 51,599 | 6,003 | 10,943 | 16,946 | 68,545 |
| Somerset | 52,981 | 54,850 | 58,663 | 61,123 | 43,917 | 5,110 | 9,314 | 14,424 | 58,341 |
| Talbot | 46,132 | 47,759 | 51,080 | 53,221 | 38,240 | 4,445 | 8,110 | 12,555 | 50,795 |
| Washington | 110,395 | 114,289 | 122,234 | 127,358 | 91,508 | 10,640 | 19,407 | 30,047 | 121,555 |
| Wicomico | 81,184 | 84,048 | 89,891 | 93,659 | 67,295 | 7,840 | 14,272 | 22,112 | 89,407 |
| Worcester | 78,556 | 81,337 | 86,991 | 90,638 | 65,125 | 7,595 | 13,812 | 21,407 | 86,532 |
| Total | $2,014,503 | $2,085,565 | $2,230,549 | $2,324,057 | $1,669,921 | $175,004 | $354,151 | $529,155 | $2,199,076 |

Note: The amount available for county roads was further reduced in 1937-38 because of laws permitting incorporated towns to share in the gasoline tax allocated to the counties.

*Extraordinary revenue in 1937-38 from St. Rd. Com. maintenance and reconstruction fund and state bond issue.

Table 6—*County Gasoline Tax Allocations Per Mile of County Roads*

| County | Approximate Mileage of County Roads Reported to be Maintained in System as of 1936 | Revenue Accruing to Counties from One and One-Half Cent Gasoline Tax Per Mile of Maintained County Road | |
|---|---|---|---|
| | | 1936-37 | Anticipated 1937-38 |
| Allegany | 384 | $228 | $164 |
| Anne Arundel | 521 | 172 | 124 |
| Baltimore | 867 | 226 | 163 |
| Calvert | 131 | 270 | 194 |
| Caroline | 491 | 170 | 122 |
| Carroll | 732 | 207 | 148 |
| Cecil | 489 | 207 | 149 |
| Charles | 222 | 385 | 280 |
| Dorchester | 500 | 191 | 137 |
| Frederick | 1,031 | 188 | 135 |
| Garrett | 719 | 171 | 123 |
| Harford | 585 | 213 | 153 |
| Howard | 285 | 235 | 169 |
| Kent | 250 | 267 | 192 |
| Montgomery | 614 | 211 | 151 |
| Prince Georges | 471 | 241* | 173* |
| Queen Annes | 381 | 216 | 155 |
| St. Marys | 234 | 307 | 220 |
| Somerset | 297 | 206 | 148 |
| Talbot | 300 | 177 | 127 |
| Washington | 591 | 215 | 166 |
| Wicomico | 501 | 187 | 134 |
| Worcester | 477 | 190 | 136 |
| Total or average | 11,073 | $210† | $151† |

*About one-third of this fund has been going to the incorporated towns.

†In many counties a part of the county allocations is turned over to the incorporated towns.

If a substantial number of miles are improved either by widening or surfacing, then it may follow that many miles of local roads will not be maintained properly for lack of funds. Table 7 shows estimated costs of maintaining the county road system. In about half of the counties the estimated amounts accruing to the counties from the gasoline tax in 1937-38 would be sufficient to cover the estimated maintenance cost, while in other counties such funds would be insufficient.

In the event that the county roads are returned to the counties, it is quite necessary to guard against increases in the property tax accompanying such action, either with or without the loss of the 1½ cent gasoline tax to the counties for local road support. For instance, the

1936-37 gasoline tax allocations to the various counties are equivalent to tax rates of from 11 cents to 83 cents, or an average of 24 cents for all counties. This does not mean, however, that it would be necessary for some counties to levy such high tax rates for road purposes in the absence of a gasoline tax fund, but it would mean that such counties now receiving a disproportionate amount per mile would not be able to improve their road systems so rapidly. Assuming that the gasoline tax would still be available to the counties in case the roads were turned back to the counties, there seems to be some justification for a better equalization of the funds accruing to the counties, yet not impair the necessary maintenance funds for any county.

Table 7—*Estimated Cost of County Maintenance of County Roads, Compared with the Estimated Revenue Accruing from the One and One-Half Cent Gasoline Tax Fund,* 1937-38.

| County | Estimated Maintenance Cost of County Roads* | Estimated Gasoline Tax Allocation, 1937-38† |
|---|---|---|
| Allegany | $ 65,000 | $ 62,787 |
| Anne Arundel | 94,400 | 64,457 |
| Baltimore | 218,300 | 141,103 |
| Calvert | 16,700 | 25,382 |
| Caroline | 52,200 | 59,948 |
| Carroll | 98,000 | 108,768 |
| Cecil | 74,400 | 72,806 |
| Charles | 30,900 | 61,451 |
| Dorchester | 90,400 | 68,631 |
| Frederick | 148,300 | 139,266 |
| Garrett | 96,300 | 88,336 |
| Harford | 78,400 | 89,672 |
| Howard | 43,900 | 48,092 |
| Kent | 37,200 | 47,925 |
| Montgomery | 100,800 | 93,011 |
| Prince Georges | 85,400 | 81,489 |
| Queen Annes | 48,300 | 59,113 |
| St. Marys | 34,200 | 51,599 |
| Somerset | 37,000 | 43,917 |
| Talbot | 50,100 | 38,240 |
| Washington | 126,000 | 91,508 |
| Wicomico | 63,300 | 67,295 |
| Worcester | 50,100 | 65,125 |
| Total | $1,739,600 | $1,669,861 |

*The following maintenance costs were assumed: macadam roads, $300 per mile for Western Shore, $200 per mile for Eastern Shore; gravel and shell roads, $200 per mile; concrete roads, $200 per mile; stone, $200 per mile; and unimproved, $100 per mile.

†In many of the counties a part of the county allocation is turned over to incorporated towns.

Table 8—*Gasoline Tax Allottment to Counties in Terms of Property Tax Rate Equivalents*

| County | Full Rate Taxable Basis, 1936-37* | Additional County Tax Rate Levy Necessary to Replace Amounts Accruing to Counties from One and One-Half Cent Gasoline Tax | |
|---|---|---|---|
| | | 1936-37 | Anticipated 1937-38 |
| Allegany | $ 77,444,517 | $ .11 | $ .08 |
| Anne Arundel | 50,861,423 | .18 | .13 |
| Baltimore | 178,686,573 | .11 | .08 |
| Calvert | 5,898,448 | .60 | .43 |
| Caroline | 14,692,379 | .57 | .41 |
| Carroll | 36,518,203 | .41 | .30 |
| Cecil | 38,957,828 | .26 | .19 |
| Charles | 9,931,523 | .86 | .62 |
| Dorchester | 23,989,168 | .40 | .29 |
| Frederick | 64,860,302 | .30 | .21 |
| Garrett | 17,665,561 | .70 | .50 |
| Harford | 52,961,213 | .24 | .17 |
| Howard | 17,945,864 | .37 | .27 |
| Kent | 16,209,154 | .41 | .30 |
| Montgomery | 95,911,076 | .13 | .10 |
| Prince Georges | 73,542,656 | .15 | .11 |
| Queen Annes | 16,513,131 | .50 | .36 |
| St. Marys | 8,638,754 | .83 | .60 |
| Somerset | 11,863,961 | .52 | .37 |
| Talbot | 20,840,118 | .26 | .18 |
| Washington | 72,864,735 | .17 | .12 |
| Wicomico | 28,207,345 | .33 | .24 |
| Worcester | 20,242,296 | .48 | .32 |
| Total or average | $955,246,228 | $ .24 | $ .17 |

When the State took over the county roads for maintenance (in all counties except three), the appraised value of county road equipment totaled $138,000, and ranged from $1,375 in St. Mary's County to $18,940 in Montgomery County. These values appear in Table 9, and the number of pieces of each type of equipment owned by the counties is given in Table 10. It is obvious that much of the equipment owned by the counties in 1933 was obsolete.

Table 9—*Total Approximate Value of County Road Machinery and Equipment in* 1933, *and Estimated Cost of Such Equipment in* 1937.

| County | 1933 Appraised Value | 1937 Estimated Cost of New Equipment Based on Kind of Equipment Owned by Counties in 1933* Amount | Tax Rate Equivalent | 1937 Estimated Cost of New Equipment Based on Ideal Road Equipment Set-up† Amount | Tax Rate Equivalent† |
|---|---|---|---|---|---|
| Allegany | $ 11,490 | $ 40,800 | $ .05 | $ 49,600 | $ .06 |
| Calvert | 2,550 | 4,500 | .08 | 26,850 | .46 |
| Caroline | 5,350 | 32,375 | .22 | 50,075 | .34 |
| Carroll | 7,000 | 42,500 | .12 | 73,275 | .21 |
| Cecil | 11,000 | 35,500 | .09 | 50,175 | .13 |
| Charles | 2,075 | 13,300 | .13 | 30,350 | .30 |
| Dorchester | 6,520 | 35,725 | .15 | 47,575 | .20 |
| Frederick | 14,110 | 62,600 | .10 | 88,450 | .14 |
| Garrett | 7,180 | 34,900 | .20 | 65,100 | .37 |
| Howard | 5,975 | 28,150 | .16 | 41,500 | .23 |
| Kent | 4,115 | 20,050 | .12 | 37,200 | .23 |
| Montgomery | 18,940 | 82,375 | .08 | 75,750 | .08 |
| Prince Georges | 9,615 | 75,600 | .10 | 53,200 | .07 |
| Queen Annes | 3,015 | 25,725 | .16 | 35,850 | .22 |
| St. Marys | 1,475 | 16,700 | .19 | 30,350 | .35 |
| Somerset | 1,965 | 20,600 | .17 | 34,200 | .29 |
| Talbot | 3,667 | 37,250 | .18 | 37,200 | .18 |
| Washington | 10,010 | 56,900 | .08 | 66,850 | .09 |
| Wicomico | 4,827 | 65,200 | .23 | 52,525 | .19 |
| Worcester | 7,145 | 61,600 | .30 | 44,425 | .22 |
| Total or average | $138,024 | $792,350 | $ .12 | $990,500 | $. 15 |

*Estimate by this Committee based on present prices of such equipment.

†Tentatively calculated by the engineering staff of the Maryland State Roads Commission.

In case each county sets up its own road organization, it would be necessary to acquire new or used equipment. Estimated costs of such equipment are presented in Table 9. Using prices of new machinery as a basis, it is estimated that the cost of such equipment for the 20 counties would be nearly $800,000. The amounts for individual counties range from $4,500 in Calvert County to $82,375 in Montgomery County, and, in terms of tax rates, from 5 cents in Allegany County to 30 cents in Worcester County, or an average of 12 cents for all counties. Tentative estimates by the State Roads Commission engineers, based on an ideal road equipment set-up in these counties, indicate a possible capital outlay for road equipment of $990,000 for the 20 counties; or in terms of tax rates, from 6 cents in Allegany County to 46 cents in Calvert County, or an average of 15 cents for all counties. These estimates may be reduced perhaps as much as 50 per cent by the purchase of used machinery.

Table 10—*Number of Pieces of Each Type of Road Equipment Owned by Counties When the State Roads Commission Took Over Such Equipment in* 1933
*(Excepting those considered as junk)*

| County | Car | Tractor | Trucks | With Power | Without Power | Patrol or Wheel | Rollers | Drags | Mixers | Mowers, Harrows and Disks | Scoops, Shovels or Plows |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Allegany | 1 | 4 | 11 | --- | 4 | --- | 1 | --- | -- | --- | 2 |
| Calvert | -- | --- | ----- | --- | 3 | --- | --- | --- | -- | --- | --- |
| Caroline | 1 | 6 | 9 | --- | 3 | --- | 1 | 11 | -- | 3 | --- |
| Carroll | -- | 6 | 1 | 3 | 10 | --- | 2 | --- | -- | --- | --- |
| Cecil | -- | 3 | 8 | --- | 7 | 1 | 1 | --- | -- | --- | 1 |
| Charles | -- | 1 | 4 | --- | 2 | --- | --- | --- | -- | --- | 1 |
| Dorchester | 1 | 4 | 8 | 2 | 5 | 1 | --- | 3 | -- | 1 | --- |
| Garrett | -- | 2 | 3 | 1 | 8 | 4 | 1 | --- | -- | --- | --- |
| Frederick | -- | --- | 4 | 7 | 17 | --- | 1 | --- | 1 | --- | --- |
| Howard | -- | 3 | 8 | --- | 2 | 1 | 2 | --- | -- | --- | 6 |
| Kent | -- | 3 | 3 | --- | 2 | --- | 1 | --- | 1 | 2 | --- |
| Montgomery | -- | 7 | 16 | 5 | 11 | --- | 6 | --- | 1 | 1 | --- |
| Prince Georges | -- | 8 | 20 | 6 | ---- | 6 | --- | --- | 1 | --- | --- |
| Queen Annes | -- | 2 | 5 | 3 | 3 | --- | --- | 15 | -- | 2 | 5 |
| St. Marys | -- | 4 | ----- | 2 | 1 | 1 | --- | --- | -- | --- | --- |
| Somerset | -- | 2 | 2 | --- | 4 | 3 | 1 | --- | -- | --- | --- |
| Talbot | 1 | 3 | 4 | 4 | 3 | 2 | 2 | 5 | -- | 4 | --- |
| Washington | -- | --- | 14 | 3 | 1 | --- | 9 | 4 | 1 | --- | 3 |
| Wicomico | 2 | 10 | 10 | 1 | 15 | --- | 1 | 14 | 1 | 2 | 8 |
| Worcester | -- | 8 | 6 | 1 | 14 | 6 | 1 | --- | -- | 2 | 2 |
| Total | 6 | 76 | 136 | 38 | 115 | 25 | 30 | 52 | 6 | 17 | 28 |

Note: Other special equipment includes the following:

Allegany County—Compressor
Carroll County—Stone spreader and stone crusher (2)
Cecil County—Road maintainer, stone spreader and trailer
Garrett County—Road maintainer and stone crusher
Frederick County—Road maintainer and stone crusher
Howard County—Conveyors (2)
Kent County—Road maintainers (2), stone spreader, trailer and conveyor
Montgomery County—Stone spreader and trailer (2)
Washington County—Asphalt distributor, stone spreader and stone crushers (3)
Wicomico County—Tar kettle and bucket conveyor.

The justification for a change in the present road maintenance plan, as stated before, should be based mainly on the kind and the extent of services rendered under the different systems. While it is impossible to provide all rural counties in the utmost extremities with improved roads, it is a matter of governmental duty to provide proper road maintenance of the existing roads to all territories where the number of residences and amount of travel make a public road necessary. All local roads cannot be justified on the basis of traffic and tax contributions solely; for social sufficiency and social efficiency play a large role in road needs. A similar principle of equalization of service must prevail in the case of highways as in the case of schools.

We are of the opinion that the Legislature took the right step in preventing the diversion of motor vehicle revenues from road purposes when the next State budget is prepared. We reiterate our opposition to any diversion of such revenues for other than road purposes and we also strongly urge that, regardless of how county roads are maintained, the cost of such maintenance should be provided from the motor vehicle revenues rather than from general property taxation.

## Income Taxation

The Maryland Legislature has adopted an income tax of ½ of 1 per cent on individual and corporation net incomes. However, in order to make certain that an income tax would be constitutional, the Legislature provided for a referendum on a constitutional amendment that would empower the Legislature to impose a tax on incomes which tax may be "classified, graduated and progressive and the exemption of a reasonable amount of income from taxation may be provided and such taxes may be in lieu of taxes on any class or classes of real or personal property as the General Assembly may determine."

Obtaining a favorable vote for income tax amendments is not an easy accomplishment. It generally means that the voting public must be educated to the virtues of, and need for, an income tax in the total tax system. The experiences in other states indicate that it is more difficult to obtain ratification of the amendment where the major proportion of the population is urban. In some cases, its defeat may be based on the notion that such a tax would be merely an additional tax, rather than replace or prevent an increase in the property tax. In other instances, its defeat may be due to the inertia of the rural people in voting on the amendment, either through lack of understanding of the issue or not voting at all.

In order to ratify a constitutional amendment in this State, a majority of the electors voting on the amendment is necessary. This means that it is important for those who are in favor of the amendment to cast their votes for same.

Farm organizations have supported the income tax as a major source of revenue in the State. The adoption of an income tax amendment does



72142

Montgomery County—Stone spreader and trailer (2)

not necessarily mean an increase in the cost of government. It should be the means of preventing further increases in the property tax or become a substitution for the present state property tax. This Committee urges all farm groups to lend their efforts toward the adoption of an income tax amendment in the State.

Table 11—*State Net Income Tax Laws in Effect As of October* 1, 1937*
(*Apply to net incomes of both individuals and corporations unless otherwise noted.*)

| State | Year First Enacted | State | Year First Enacted |
|---|---|---|---|
| Alabama | 1935 | Montana | 1933 |
| Arizona | 1933 | New Hampshire† | 1923 |
| Arkansas | 1929 | New Mexico | 1933 |
| California | 1935 | New York | 1919 |
| Colorado | 1937 | North Carolina | 1921 |
| Delaware† | 1917 | North Dakota | 1919 |
| Georgia | 1929 | Oklahoma | 1915 |
| Idaho | 1931 | Oregon | 1929 |
| Iowa | 1933 | Pennsylvania‡ | 1935 |
| Kansas | 1933 | South Carolina | 1922 |
| Louisiana | 1934 | Utah | 1931 |
| Maryland | 1937 | Vermont | 1931 |
| Masscahusetts | 1916 | Virginia§ | 1915 |
| Minnesota | 1933 | Washington | 1935 |
| Mississippi | 1912 | West Virginia | 1935 |
| Missouri | 1917 | Wisconsin | 1911 |

*The following states levying income taxes have abolished the state property tax: California, Delaware, New York, Oklahoma, Pennsylvania and Virginia.

†On individual net incomes only.

‡On corporation net incomes only.

§First income tax in 1843, but first modern net income tax in 1915.

Arguments for a state net income tax amendment in this State are as follows:

1. It would provide a source of permanent and major state revenue to replace the state property tax.
2. It would provide for a better method of taxing intangibles not equitably taxed under the general property tax laws.
3. It would assist in broadening the tax base, by reaching incomes not taxed for the support of the state government under the present system.
4. It is a fair tax, in that it is based on the ability to pay.
5. About 32 states now have an income tax, and many states use that tax for the replacement of the state property tax.

The following recommendations are offered by the Committee:

1. That the cost of future state bond issues be paid from state tax revenue sources other than the general property tax.

2. That a study be made of the results obtained from the reassessment made in several counties in 1937.

3. That careful consideration be given to the county road problem based upon such facts as presented herein and additional facts obtainable.

4. That the allocations from the 1½ cent gasoline tax be continued for the support of county roads.

5. That we strongly oppose any diversion of the gasoline tax for any purpose other than for the building and maintenance of roads.

6. That farm organizations give their utmost support toward the adoption of the income tax amendment in order to provide a permanent source of revenue for replacing the state property tax.

This report is respectfully submitted by the Joint Committee of the Maryland State Grange and the Maryland Farm Bureau, Inc.:

D. G. HARRY, *Chairman*
C. E. WISE, JR., *Secretary*
H. H. NUTTLE
R. C. F. WEAGLEY
E. M. ETZLER
P. C. TURNER
T. B. SYMONS
T. ROY BROOKES
WM. PAUL WALKER
S. H. DEVAULT
HOMER REMSBERG
A. G. ENSOR
EDWARD HOLTER
CHARLES I. BOYLE
J. H. BLANDFORD.

MR. ETZLER: I want to give a few of the figures in Frederick County as to what brought us to the conclusion that we wanted to have a law passed for a permanent board of Tax Assessors. We had some trouble in getting that through the State Legislature, but we now have a Permanent Board of Assessors. That started about the first of June, and I being one of the members of the Committee to decide on the taxable basis of our County, on the personal property, know something of those figures. We had a taxable basis of $7,107,600, and we found a decrease in ten years of $1,332,840. Those re-assessments started around about June first, and up until December 1st, in trying to make the levy for 1938, we found in six districts there was a taxable basis of $407,900,—in one district in 1927 the taxable basis was $313,925, and in 1937, $237,890., —a loss of $76,000, in that district alone. There may have been duplications because of people moving from one section to another. But this is a matter for you to go home and study about from now on until the

next meeting of the Legislature so you may educate your people to see that next November that amendment should be adopted.

After reading the balance, Mr. Etzler read the names of the complete Committee, and moved the adoption of the report as read.

Mr. Sam Linton, of Charles County, seconded the motion.

MR. NUTTLE: This is right comprehensive, it has many recommendations in it. Is there any discussion?

MR. ANDERSON, of Frederick County: I think we have before us a matter this morning that should receive more consideration than just to move to pass it. This income tax has been before us as long as I have been coming to this annual convention, and we have never got very far with it. Last year at the session of the Legislature an income tax was passed which has more or less put a bad taste in the mouths of our people. Now, this proposed income tax that we are talking of this morning is supposed to be a re-placement tax. This income tax if finally put into law can be used for the re-placement of the property tax. This is what we as property holders, farmers, here today representing those folks back home who have given us their Farm Bureau dues, must consider carefully. We must go out and do as well as we can with their five dollars that they pay in, and we must realize right now that our responsibility begins from this moment as delegates from these various Counties. The income tax does not appeal to the man who has a salary,—it is a different income from that derived by those who own property such as farmers. Some oppose the income tax, and say there will be an additional income tax if we reduce the tax that farmers pay,—there may be some truth in that, the law is not clear. The spirit back of this does not have that purpose. I repeat though the situation as it stands,—the income tax taking care of relief in the State of Maryland has given the wrong impression. If we do not get this amendment passed this time it will be a long time before we will get this far again. It is not only the question of the members of the Farm Bureau, but of the Real Estate Boards of Baltimore City and of the Counties, the prominent real estate men. I want to say that we should go down and impress upon the Delegates from the Counties that the fight is on from now on. Our Board of Directors and our officers have a responsibility. They should call upon, in my opinion, all organizations that are friendly to the Farm Bureau. The Grange, of course, has a joint tax committee. The Grange and the Farm Bureau go on well together. I was a member of the Tax Committee myself for several years. President Nuttle in his opening remarks referred to the relationship of the Extension Service and the Farm Bureau. He spoke of the twin blocks of the V-8, the Extension Service and the Farm Bureau, but there are three, the Grange, the Extension Service and the Farm Bureau. The Grange is involved just as much as the Farm Bureau. I know of no better service our Extension Service can do than to help to educate our people, and get over to them the facts, the spirit underlying this amendment that we are to vote on. I know of no better service they can do than to get this information

before our property holders, our farmers, in particular. We should have the County agents constantly urging the farmers, and giving the proper information about this income tax. They are in a position to give the true information and facts I think we are in a position to expect that from the Extenson Service,—full cooperation in seeing that our people are fully informed regarding the amendment.

MR. NUTTLE: Any further remarks?

MR. JONES, of Montgomery County: I would like to be enlightened a little bit further in regard to this matter. What would happen where a County has lost about one-third of its taxes on real estate improvements, —where modest homes costing from three to four thousand dollars by the hundreds and by the thousands have been turned into large estates owned by millionaires. What do we do about that? Would not they get out of taxes on that property if this went through?

MR. NUTTLE: My idea is that eventually, if we get what we want, this won't affect your County property tax in any way. We hope this income tax that those millionaires would have to pay would make up for the loss of the property tax.

MR. JONES: We would lose a whole lot of property tax on those properties.

MR. NUTTLE: You will get a whole lot more of income tax. I wish we had a lot of your wealthy people coming out our way. The income tax they would have to pay would amount to a whole lot more than their State property tax.

MR. LOWE, of Talbot County: I agree with the gentleman from Frederick County that we ought to have a group of trained speakers to present the facts about this amendment to our County organizations, so that we may put this over. We do not want to have the amendment lost. I think a good work would be to educate the people of the State, more particularly the property owners, so that they would understand what this proposition is about.

MR. NUTTLE: I think we should attempt to contact all the property holders,—and the Real Estate Boards of Baltimore City and the various Counties, if we are going to carry this through. That is my idea.

Mr. Weed rose in the back of the room, and Mr. Nuttle asked: "Shall we give Art Weed the privilege of the floor? Permission given.

MR. WEED: I went through a fight exactly like this with the Farm Bureau in Ohio, and we won the fight by getting a special committee supported by the Grange, the Farm Bureau, and other organizations to conduct the campaign for the benefit of the entire State, not for any particular group. We had the Farm Bureau and the Grange as leaders in that campaign and they won.

MR. NUTTLE: Thank you, we will give him the floor again. Now, all in favor of the adoption of this report, please say "Aye".

MR. WISE: I would like to make this suggestion that in your Counties you try to have this amendment placed at the top of your amendments,—

you know the candidates are always glad to be at the head of the list of amendments.

The report was adopted.

MR. NUTTLE: We will now have the report of the Resolutions Committee, Mr. Turner Chairman.

It was moved by Mr. Connick, and seconded by Mr. Jones, of Dorchester Co., that the report be taken up article by article and voted upon, and then also adopted as a whole.

**Report of Resolutions Committee**

(Mr. Turner moved the adoption of each as read).

Resolution No. 1 read, seconded by Mr. Connick and approved.

Resolution No. 2 read, seconded by Mr. Bolton, of Charles County, and approved.

Resolution No. 3 read, seconded by Mr. Connick, and approved.

Resolution No. 4, read, seconded by Mr. Phillips, of Wicomico Co., and approved.

Resolution No. 5, read, seconded by Mr. Jarrell, of Caroline Co., and approved.

Resolution No. 6, read, seconded by Mr. Boyle, of Queen Annes Co., and approved.

Resolution No. 7, read, seconded by Mr. R. Blackburn, of Caroline Co., and approved.

Resolution No. 8, read, seconded by Mr. Ford of Kent Co., and approved.

Resolution No. 9, read, seconded by Mr. Linton, of Charles Co., and approved.

Resolution No. 10, read, seconded by Mr. Smith, of Queen Annes Co., and approved.

Resolution No. 11, read, seconded by Mr. Duvall, of Prince Georges Co., and approved.

MR. FUNK: I think we have been having such a resolution as this almost from time immemorial, certainly ever since I have been attending the meetings. Always the resolutions are adopted and nothing more. I hope this time when we adopt this resolution the Farm Bureau will not rest on just passing it, but actually get down to business and get something done. We ought to get a law passed providing that every closed package of fruit should be stamped so that the purchasers can know what they are getting. If they get a basket marked No. 1 of apples they will know what they are getting, a good grade of apples, not just cooking fruit covered over with some good stuff, some high-colored apples.

MR. WISE: Mr. Funk has brought out a very pertinent point,—that this resolution has been passed before, and nothing appeared to be done. We should get back of this movement and educate the growers in the five Counties that grow the most vegetables and fruits. We had that Bill before the last Legislature and Dr. Symons came over with his market men, had three hearings, and two members of the Legislature,—(Lloyd

and Higgins )opposed this bill and kept it in Committee. You should see that your members elected to the Legislature really represent your wishes in the matter.

MR. TURNER: I know what he means. I was down there.

MR. FUNK: I appreciate that information for the benefit of the future. We will have to start at the polls. The trouble was that when our man got down there he got in the hands of the commission men in Baltimore. We heard that and we came down here one Friday night. We found that one of our own men from Hagerstown was against the bill and talked against it. Up there he was in favor of it, but he got in the hands of the commission men, and it was too late, we could not get the bill out of the Committee. We are going to learn by that, and consider not necessarily Republicans or Democrats, but men who will work for this legislation.

MR. NUTTLE: It is certainly refreshing to have this come out here, to talk over our problems.

MR. ENSOR, of Baltimore County: I happen to be one of the men who served in the Legislature, and I remember the Grading Bill, and Dr. Symons coming down three days before that Committee. We had that Bill ready to pass when people from those very sections came and asked us not to vote for it. It is not the members' fault, it is the fault of the people from the various Counties of this State who come down there and ask us not to vote for this Bill.

MR. THIEROFF: We are glad to know what becomes of those Bills. I think we ought to have more teeth in this bill.

MR. WISE: It has teeth,—its adoption is voluntary, but once two-thirds of the growers vote for a set of standards they become compulsory.

The adoption as moved and seconded was carried.

Resolution No. 12 was read, seconded by Mrs. Hopkins, and approved.

Resolution No. 13 was read, seconded by Mr. Blackburn, and approved.

Resolution No. 14 was read, seconded by Mr. Smith, of Queen Annes Co., and approved.

Resolution No. 15 was read, seconded by Mr. Baker, of Howard Co., and approved.

Resolution No. 16 was read, seconded by Mr. Funk, and approved.

Resolution No. 17 was read, seconded by Mr. Weagley and approved.

MR. JONES, of Anne Arundel County: I do not think that is quite broad enough. I would think the penal labor could be used for other purposes as well.

MR. NUTTLE: That is taken care of in the next resolution.

MR. TURNER: In reading Resolution No. 18 I want to say there were a whole lot of resolutions came in on this subject, and we tried to combine them in this one resolution which met all the wishes of the Counties.

Mr. John Bushey, of Caroline County, seconded the motion to adopt the resolution.

MR. GRIMES, of Anne Arundel County: As we live right near the House of Correction, we thought it would be a good idea in case of emergency

if those convicts could go out and work on the farms. The Grand Jury of Anne Arundel County also recommended that those convicts be allowed to do that.

MR. TURNER: I would like to say the Committee considered the resolution you sent in thoroughly, and in view of the law passed by the last Legislature designating what was permissible for convict labor,—to be used on roads and other State institutions, this Committee felt, as that was the law passed by the Legislature, farm labor could not be included now. I think also you would come in conflict with the Interstate Commerce law if you wanted to ship your farm products to another State.

MR. BOLTON, of Charles County: I understand there is a movement on foot for the employment of more W.P.A. labor on roads. As far as Charles County is concerned, we do not want them. We can build the same amount of roads for half the price that they would cost us.

Resolution No. 18 was duly approved.

MR. LINTON: I would like to go back and get some information about a resolution which has been approved,—No. 15 for Rural Electrification. Does that include all of the roads of Maryland? In Southern Maryland we have the only project proposed for rural electrification, and that resolution might do us some harm.

MR. TURNER: A similar resolution was passed in Chicago because the cooperatives started to build electric lines, and they found the entire management was taken out of their hands. We thought we were protecting you in Charles County in putting that in.

MR. LINTON: I have this in mind. We have a request in for further allotments, and this might do us harm. I, therefore move to re-consider Resolution No. 15.

Motion seconded by Mr. Bolton and carried.

Mr. Linton then moved to amend Resolution No. 15 by striking out the second and third paragraphs and to approve the first paragraph. Mr. Bolton seconded the motion and the amended resolution was adopted.

Resolution No. 19 was read, seconded by Mr. Bolton, and approved.

Resolution No. 20 was read, seconded by Mr. Connick, and approved.

Resolution No. 21 was read, seconded by Mrs. Weagley.

MR. NUTTLE: I did not say anything about that in my address.

Thereupon, upon motion, the resolution as read was amended by striking out the words "president, H. H. Nuttle and", and duly approved.

Resolution No. 22 was read, seconded by Mr. Starkweather, of Charles Co., and approved.

Resolution No. 23 was read, seconded by Mrs. Hopkins, and approved.

Resolution No. 24 was read, seconded by Mr. Funk.

MR. CONNICK: Is that "State-wide" with or without horse racing?

It was suggested that a copy of this resolution be sent to the President, and Secretary of the State Board, in fact, to all the members of the Fair Board.

MRS. HOPKINS: We expect to send a copy to each member respecting the poultry exhibition.

Resolution No. 25 was read, seconded by Mr. Grimes, of Anne Arundel Co., and approved.

Resolution No. 26 was read, seconded by Mr. Connick, and accepted.

MR. CONNICK: Would it be right and in order that a copy of this resolution be sent to Senator Tydings. I understand he is willing to have it repealed.

MR. TURNER: How about that, Mr. Ensor?

MR. ENSOR: I did say this,—that I did not think the Farm Bureau could do anything else than pass this resolution.

MR. THIEROFF: Well, anyway, I move a copy of this resolution be sent to Senator Tydings. Motion seconded and carried.

Resolution No. 27 read, seconded by Mr. Lankford, of Somerset County, and approved.

Resolution No. 28 read, seconded by Mr. Jarrell, of Caroline Co., and approved.

MR. NUTTLE: Permit me to say I have been delighted since I was put on the Board of Regents, respresenting the agricultural side, with the development of the agricultural side of the College. It is really going to town. We want your cooperation in building it up into what you want.

MRS. HOPKINS: They are going to town, and we, the poultry people, are going with them.

Resolution No. 29, read, seconded by Mr. Shillinger, of Talbot County, and approved.

Rseolution No. 34 read,

MR. GRIMES: I want to second that as a friend of Mr. Duvall. I feel that I knew Mr. Duvall as well as anybody. We feel his loss very much in Anne Arundel County, and I would feel very grateful if I may be permitted to endorse that resolution.

MR. NUTTLE: In my address yesterday I mentioned the fact that Mr. Cockey and Mr. Carver could not be here because of illness. I think it might be well to send a delegation out to see them to tell them how sorry we are that they are not here.

MR. TURNER: I have been fortunate in being able to see Mr. Cockey a couple of times during the last ten days. I want to say that he was delighted with the report of what was accomplished in Chicago. He was pleased that Mrs. Weagley was raised to be Secretary of the Associated Women, and that Mrs. McGolerick won second prize in the Speaking Contest. I want to say that in his last hours he is thinking of this organization and is interested in everything we do. A great leader is about to pass over the river and rest in the shade of the trees.

DR. SYMONS: I move that such a resolution be adopted and that the Secretary be authorized to send a separate resolution to Mr. Cockey,—a resolution of sympathy and appreciation and love. No. 32.

Mr. Pearce seconded the motion.

Mr. Ensor asked that flowers be sent.

MR. PEARCE: He can receive flowers, but not the Directors. Mr.

Cockey's whole heart and soul is with the organization.

MR. JONES, of Montgomery County: If more than one second may be permitted I should be very glad to add another second to that motion. I have wanted to go to see Mr. Cockey. He is a very dear friend of mine.

Motion carried.

MR. CHAFFEY: I have been pinch hitting for Mr. Carver, our President. He is very much loved. He has the Farm Bureau spirit and heart. He has worked with us, and built our organization up. We feel the loss of him very much. He told me up until Friday that he was going to try and get over here for a day, but he finally sent me word he could not possibly be here. Meanwhile, I had been instructed by some of the Directors and some of the State officers to send Mr. Carver some flowers, and I have sent them down. I make a similar motion for Mr. Carver as was passed for Mr. Cockey. No. 33.

Mr. Keenan, of Somerset, seconded the motion, and it was carried.

MR. NUTTLE: I regret that I have not been able to get to see Mr. Cockey. I have planned for two months to try and get down to see Mr. Carver. I would have to drive 140 miles, and the only time I have is Sunday afternoon. I would have to stay away from church to do it.

Resolution of Appreciation was read, and seconded by Mr. Linthicum.

MR. LINCHICUM: I move that that third paragraph be amended to end with the word "co-operation".

Motion seconded and the resolution was passed as amended. Mr. Wise called attention to the fact that this was the twenty-second annual meeting instead of the twenty-first as first written.

MR. CONNICK: I have a resolution: "RESOLVED, that the officers and directors be elected by acclamation."

MR. THIEROFF: We have a situation in our locality, where they are going to vote on an additional Judge in our Court. It seems like there are plenty of Judges to do all the business there is if it is efficiently conducted. I don't see any reason for an extra Judge. This is coming up as a Constitutional amendment, and it will cost us an additional eight or ten thousand a year, and I think this organization ought to go on record to do something about this particular case.

MR. TURNER: We had such a resolution before the Resolution Committee, but for lack of knowledge as to whether extra Judges were needed in the different localities, we did not think we had enough information to take any action. We did not think it wise to endorse that resolution because we did not have sufficient information and that is the reason that we voted to lay it on the table. We thought it might be only a local matter.

MR. THIEROFF: A Constitutional amendment ought to be a State matter. That is the reason I think we ought to consider it here.

MR. TURNER: Well, do you want to offer a resolution now?

MR. THIEROFF: I will offer a resolution that this organization go on record in opposing any additional Judges at this time.

MR. JONES, of Montgomery County: I don't see how we can do that.

MR. NUTTLE: That is right, you would have an additional Judge in your Circuit too.

MR. JONES: I would say that our Judge is certainly overworked. He is a splendid man, doing his duty as well as possible. We feel that it is breaking him down, and he should have some assistance, and that is the only way we can give him assistance.

MR. NUTTLE: Your resolution, Mr. Thieroff, would not necessarily apply to Montgomery County?

MR. THIEROFF: No. there are two amendments, and we could work for one and against the other.

MR. MCDOWELL: I am in favor of an extra Judge, because the people of Elkton transact as much business as the other four places put together, and as the Judges live in the other section we only have a part of a day to transact legal matters, and I think we need an extra Judge, not for the criminal business but for the legal business.

MR. NUTTLE: Cecil County had a Judge from that County and now does not have any. The three Judges are from the lower end of the Circuit. But politics may change the situation and in the matter of a few years they might all come from that section.

MR. THIEROFF: We don't want to cause any trouble in Cecil County.

MR. DAVIS: We are not opposed to Mr. Jones getting a Judge, we are opposed to the other fellow, and I am afraid our motion will not get very far because of that.

Question? I would like to ask Mr. Jones what is the difference between the hours put in by the Judges and the farmers?

MR. JONES: I don't believe any farmer in our County works any more than our Judge does at the present time. I understand he is there at night trying to keep up with the work, and at present he is over-taxing himself, and it is my judgment and the judgment of our people that we ought to have another Judge.

MR. NUTTLE: Do you have a Judge there regularly?

MR. JONES: No, three Judges in the three Counties and they help each other.

MR. LINTON: Does this affect only that community?

MR. NUTTLE: I think as the money is paid by the entire State we are interested in it as a State proposition. There is no question but that down there the general sentiment is against this extra Judge, but the problem is a State-wide problem. We have to change the Constitution to get an additional Judge.

MR. THIEROFF: I still make a motion as opposing that additional Judge in the Second Judicial District.

Mr. Smith, of Queen Annes County, seconded the motion.

MR. CONNICK: That resolution was submitted to the Resolutions Committee and very carefully considered, and we decided that the matter was local, and that it would not do for us, representing the various Counties of the State to say whether an additional Judge was needed there or not. It would be almost impossible for us to determine whether

that Judge is needed or not. I do not think we ought to take any action on that until we know more about it. Prince Georges will need an additional Judge soon, living as we do so near the City of Washington. Our Judge is over-worked. He works much longer hours than the average farmer.

MR. LEWIS, of St. Marys: This is my maiden speech. I believe that a different approach can be made to this subject. I do not believe this should be put in the shape of a resolution. I believe better work would be done by contacting the organization in the various Counties, and have the opinion expressed in the State as a whole that as far as they are concerned they do not want a Judge down there. It seems to me by contacting the County Farm Bureau and having them pass the word out, it would do more in the Counties, and I am sure help these people just as much as a resolution.

MR. NUTTLE: I am wondering if it would not be just as well to get your facts down,—how much time is given in Cecil County, how much work done there, etc., do that by word of mouth, get that and send it around to different Counties would not accomplish the same thing.

MR. LINTON: Can you tell us how this amendment will read?

MR. NUTTLE: One additional judge in the Second Judicial Circuit. He will get $8,500 a year.

MR. LEWIS: And St. Marys has to pay a share of that $8,500, of course?

MR. NUTTLE: Yes.

MR. THIEROFF: Well, I am glad to get this discussion before you any way. If the members prefer that way, I will withdraw my motion if you will on your word of honor do that way,—work against the election of an additional Judge in our Circuit, but we will all work for an additional Judge in Mr. Jones' Circuit.

The second of the motion was also withdrawn.

MR. NUTTLE: I am glad to have this open discussion.

MR. THIEROFF: Now, I have another matter,—oh, I have lots of things here,—we have heard a lot about the T.V.A. project, but we have not been able to get any nitrogenous fertilizer there. Of course, there was a time when they could not get nitrate from Chile but that is over. The Company that formerly produced the fertilizer had to move to Niagara Falls, I have been using some of that, but I believe that we should get our nitrogenous fertilizer from the T.V.A. It would cost us less. I would like to make a resolution that we have this organization go on record in asking the T.V.A. to try to manufacture nitrogenous fertilizer at any of their electric plants.

MR. TURNER: I think I have read in the last two weeks where they have got a very high grade fertilizer perfected, and passed out over the United States to be used this year. The American Farm Bureau passed a resolution in Chicago about that. I believe we have it right here, at any rate, I know the gist of it. It said that we favored the continuation of the present T.V.A. project and we opposed the completion of any other

such activities until such time as the project now in process of construction has proven its economic success.

MR. THIEROFF: I would like to make a motion that we favor the manufacture of nitrogenous fertilizers by the T.V.A.

Seconded by Mr. Connick and passed. No. 31.

Thereupon the resolution on Bang's Diseases presented at the open session Thursday morning was presented again to be included among the resolutions presented this morning as follows. No. 30.

We, the Maryland Farm Bureau in convention assembled resolve that if there is any cut in the Federal appropriation for Bang's Disease eradication, it be such as not to seriously curtail the orderly eradication of this disease as planned.

We instruct our officers to wire a copy of this resolution to our United States Senators in Washington.

Mr. Linthicum seconded the resolution and it was duly carried.

MR. TURNER: The names of the Committee should be on this report,—reading the names of the full Committee. I suggest the names be added to the official copy.

MR. NUTTLE: We have a new procedure. We get them done a day or two ahead. I want to congratulate that Committee on its fine work.

MR. LEWIS: Will we be furnished the information with reference to the Judge? Will that be sent us?

MR. THIEROFF: Would it not be possible to have the minutes of the Board sent to the County Farm Bureaus so that they may be more closely correlated,—the work in the various parts?

MR. WISE: You mean the various Counties from the State Board? That has been done for the last few meetings.

MR. THIEROFF: We did not see them.

MR. WISE: That is up to your County officers.

Mr. Linton takes the chair for the election of officers.

Mr. Linton called for the report of the Nominating Committee.

MR. WISE: The Nominating Committee nominates Harry H. Nuttle to be President of the organization for 1938.

Mr. Jones, of Dorchester County, seconded the nomination.

Mr. Connick presented a resolution that the officers and directors be elected by acclamation. Mr. Fred Jones seconded the motion and it was carried.

The election was unanimous for Mr. Nuttle as President.

MR. WISE: "I cast my ballot for H. H. Nuttle to be President for 1938."

MR. WISE: The Nominating Committee nominated Mr. P. C. Turner as Vice-President.

Mr. Jones moved the nominations be closed.

Mr. Bushey seconded the motion and it was carried.

The Secretary was authorized to cast a ballot for Mr. Turner.

MR. WISE: I cast my ballot for P. C. Turner to be Vice-President for 1938.

MR. NUTTLE: I want to thank you for the loyal support you have given me. I cannot make a speech, and I have none written out. However, I hope we will all be together this year and go forward in our Maryland Farm Bureau program. I will do the best I can.

Motion duly made, seconded and carried, that the delegate body does hereby ratify and confirm the actions of the Directors during the past year as contained in the minutes of their meetings.

MR. CHAFFEY: Do I understand that Mr. Carver's name is still on as Director?

Answer: Yes.

MR. CHAFFEY: That is what I want.

DELEGATE: The Stockmen's Association each year change their directors. I am sure the director was changed this year.

Answer: Cross that out for the Stockmen.

MR. SMITH: That is what the Credentials Committee had to go by. The Stockmen's election has taken place since that report was sent in.

Wilbert Smith, chairman, read the names of the Directors certified by the counties.

## DIRECTORS

| | |
|---|---|
| Home and Community Chairman | Mrs. R. C. F. Weagley |
| Anne Arundel County | Oscar F. Grimes |
| Baltimore County | P. C. Turner |
| Calvert County | J. Ellis Bowen |
| Caroline County | Linwood O. Jarrell |
| Carroll County | John S. Bushey |
| Cecil County | D. B. McDowell |
| Charles County | Samuel C. Linton |
| Dorchester County | A. K. Austin |
| Frederick County | Alvie M. Etzler |
| Harford County | Fred C. Jones |
| Howard County | Roby H. Mullinix |
| Kent County | Howard S. Leaverton |
| Montgomery County | J. W. Jones |
| Prince Georges County | W. R. C. Connick |
| Queen Annes County | John W. Smith |
| Somerset County | W. T. Chaffey |
| St. Marys County | Grenville Lewis |
| Talbot County | Francis G. Shillinger |
| Washington County | R. C. F. Weagley |
| Wicomico County | C. C. Phillips |
| Worcester County | Ralph Shockley |
| Md. State Poultry Council | J. W. Snoddy |
| Md. Cooperative Milk Pro. Inc. | I. W. Heaps |
| Md. State Horticultural Soc. | H. C. Whiteford |
| Md. Vegetables Growers Assn. | Joshua Lynch |

Hillsboro-Queen Anne Coop. Assn._____Chas. I. Boyle
Maryland Tobacco Growers Assn._____Nelson Turner
Maryland Stockmen's Assn._____J. Kieffer Funk
Maryland State Beekeepers Assn._____
Maryland Crop Improvement Association_____
Maryland State Horsebreeders Assn._____

Duly moved, seconded and carried that the delegate body elect the above as Directors and Honorary Directors of the Maryland Farm Bureau, Inc. for 1938.

There being no further business, Mr. Thieroff moved the adjournment of the meeting, and the motion was seconded and carried.

## RESOLUTIONS OF MARYLAND FARM BUREAU, INC. 1938

1. We pledge anew our confidence in President O'Neal and the other officers of the American Farm Bureau Federation. We commend their efforts to correlate all organized farmers into a national program for agriculture. We are pleased with the achievements of our national Farm Bureau during the past year and we pledge our support to that organization and to the Secretary of Agriculture in developing a permanent program for Agriculture through the soil conservation and domestic allotment act with any sound amendments that seem to be necessary in order to maintain parity prices for agriculture and at the same time conserve our soil resources. We further recommend the policy of self help and urge the correlation of the cooperative efforts in our national and state programs.

### Farm Credit

2. We wish to pay tribute to the value of the Federal financing and refinancing of the farmer. Many foreclosures and bankruptcies have been headed off; many families have been kept together on the farm and given a chance to work out their economic salvation. We recommend that every possible means be employed to lower the general averages of interest rates charged farmers. We believe that the cost of distributing credit can be lowered—thereby reducing the spread between wholesale rates now available and the total cost to those securing the loans.

We urge farmer stockholders be encouraged in every way to take a more active interest in the selection of directors of their respective farm credit organizations.

We support the American Farm Bureau Federation in its efforts to continue the 3½% interest rate on Federal Farm Loans.

We reaffirm our endorsement of the Farm Credit Administration and urge a continuation of lowest possible rates of interest for production and other loans consistent with the predominant rates of interest to industry.

We urge the continued liberalization of rules and regulations governing such loans especially requirements for payment of principal on commissioner loans to enable deserving farmers to secure reasonable credit for the conduct of their business.

### Public Safety

3. We pledge our cooperation to all agencies working toward the prevention of automobile accidents and the elimination of road hazards wherever possible. We urge the strict enforcement of laws and traffic regulations having a bearing on our accident record and since many of our serious accidents are caused by those driving while under the influence of intoxicating liquors, we urge that a jail sentence be imposed on those convicted of this offense.

We urge the Governor, Legislature and the State Roads Commission to prosecute a vigorous policy in the elimination of grade crossings.

### Farm Tenancy

4. We are heartily sympathetic with a conservative national program for reducing tenancy and the encouragmeent of farm and home ownership. We are opposed to indiscriminate loans of public monies for the purchase of lands for any and all tenants or persons without proven experience to engage in farming. We believe that a safe program can be developed whereby every safeguard can be erected to encourage deserving tenants to purchase farm homes at the lowest possible rates of interest and amortization. We believe that such a program should be delegated to the U. S. Department of Agriculture and the Farm Credit Administration.

### Taxation—Tax Committee Report

5. We highly commend the members of the Joint Committee of the Grange and the Farm Bureau for the work done on their comprehensive report of the tax situation and their sound recommendations. We hereby endorse the report carrying with it the recommendations on the State Income Tax which culminated in the flat tax on income being passed by the recent session of the Legislature.

We further endorse the Constitutional Amendment for a graduated income tax that is to be voted on in 1938 and we advocate an educational program to inform the voters as to the merits of this plan, namely the eventual elimination of the state property levy.

### Conservation Program

6. The Farm Bureau as an organization, is deeply interested in conserving the natural resources of our State. We believe that a careful study should be made of present legislation and a proposed program be

drawn for the more effective conservation of our game resources as well as the great resources of the Chesapeake Bay. We pledge our cooperation with other state agencies interested in this cause. We urge our farmers to attend the General Wild Life Conference in Baltimore, February 11-19.

### Land Use

7. The Maryland Farm Bureau is sympathetic to the development of an intelligent and systematic land use policy. We recognize that there are several sections in the state which contain sub-marginal land that could be better devoted to reforestation and conservation than to any phase of agricultural production. Our organization wishes to cooperate with the State and Federal Governments in their present and future plans for proper land use.

### Japanese Beetle

8. Inasmuch as we were successful in obtaining a state appropriation for the control of the Japanese Beetle, we recommend full cooperation of the counties in this control program even to the extent of county appropriations to augment those of the State.

### Cooperative Business

9. We reaffirm our faith in the principles of business cooperation among farmers in all fields. We pledge our active support to all cooperative organizations serving farmers in Maryland. We are particularly desirous, as a Farm Bureau organization, of using our best efforts to correlate the various cooperatives in the state to the end that all farmers may be served by the cooperative or cooperatives best able to serve them in an efficient and harmonious manner.

### Relief

10. We recommend that the administration of relief be returned to local authorities and that Federal, State and local funds be used for this purpose so that only the absolute necessities in relief be provided.

We reiterate our position that relief jobs should not be sufficiently attractive to divert help badly needed on Maryland farms.

We feel that partial payment of local taxes for relief will be the greatest safeguard against unwise and unnecessary expenditure of funds for this purpose.

### State Grading Law

11. Prices received for truck crops marketed by Maryland producers are lower than conditions warrant. A state law to permit the voluntary

establishment of grades and standards would prevent the dumping of low grade produce and do much to improve this situation.

While some of these sub-standard products are produced locally, most of them come from other states. We should inform our growers on the possibilities of a state grading law and we urge all our forces to concentrate on this project looking to the passage of a bill in the next session of the Legislature.

### Rural Health

12. We heartily endorse the action taken by the American Farm Bureau Federation relative to rural health and pledge a continuance of study along that line as instituted by the committee on Medical Care of the American Farm Bureau Federation.

### Meat Animal Importation

13. We oppose the repeal, advocated in some sections, of Section 306-A of the Smoot Hawley tariff since such repeal would allow the importation into the United States of meat animals from countries not free from foot and mouth and other similar animal diseases.

### Reciprocal Tariff

14. We recommend that in making reciprocal tariff agreements with foreign governments no dairy products be admitted that are not produced under the same health regulations as required for our dairymen.

### Rural Electrification

15. We affirm our belief that farmers are entitled to the benefits and services of high line Rural Electrification power and such loans from the government as will afford to the states sufficient funds to organize sound projects and construct lines.

### Monetary Policy

16. We re-affirm our position in support of the A.F.B.F. in their program for monetary reform which includes continuance of the President's power to adjust the gold content of the dollar until such time as a permanent monetary authority is provided by the National Congress. We believe that the right time to enact legislation, to restore price levels and create a managed currency is now, while the entire nation knows that the need exists.

### Lime Prices

17. In the State of Virginia the use of penal labor in the quarrying and preparation of lime for their soils has materially reduced the cost of

lime to farmers. We urge the President of the Maryland Farm Bureau to appoint a committee to secure information on this question with a view, if possible, of having the State Penal authorities of Maryland furnish labor so that farmers of our state might secure their lime at a more reasonable price.

### Roads

18. We register our disappointment in the progress made in building farm to market roads in this state. We are anxious that public opinion be awakened to the importance and practicability of eliminating many of our bad country roads. We therefore earnestly urge our state road commission and our Boards of County Commissioners to make every effort to correct this situation.

Having been instrumental in securing the passage of a law prohibiting the Governor, when making his budget, diverting Gas Tax Money from other than road purposes, we recommend that in the future a larger proportion of these funds be used as follows:

a. That farm to market, school bus and mail routes be given first consideration.
b. The maintenance of previously constructed roads by binding with oil or other substances, especially those roads constructed by P.W.A.
c. We recommend that the state road commission follow a policy of proper weed control along state highways.
d. We urge the construction of low cost gravel or native stone roads where a more expensive type is impractical.
e. We urge the state roads commission to use to the fullest extent the $100,000 appropriation made available for the use of convict labor on the roads of the state.

We further recommend that a portion of this money be used on roads which are impassable during winter months.

### Federal Aid to Roads

19. We are in sympathy with all efforts to balance the federal budget but in so doing we are opposed to road appropriation being cut more than its proportionate part of the whole.

### Tax on Cigarettes

20. We believe that any special state tax on cigarettes or other tobacco products will operate to the disadvantage of producers of tobacco. We hereby register our opposition to any such tax.

### Leaders Training

21. We commend to the leaders of all of our Farm Bureau units the careful and thorough study of the suggestions made in the report of our

secretary, C. E. Wise, Jr., relative to the formation and operation of a study group program. We urge each state and county Farm Bureau director to cooperate in the holding of leaders' training groups so that the program of the Maryland Farm Bureau may contain those things in which the individual members are most interested, and so that the program of each unit of our organization may coordinate its efforts with those of other local units into a combined program for county, state, and national Farm Bureau organization.

### Train Length Bill

22. We believe that the passage of the so-called Train Length Bill by Congress is unfair to the railroads and inimical to the best interests of farmers and the agricultural industry.

### State Wide Dog Law

23. We urge the inaguration of a study of sucessful state-wide dog laws with the view of developing some plan of uniform legislation for the conservation of our game and especially for aiding our poultry and sheep industries.

### State Fair Board

24. We heartily endorse the legislation providing for the State Fair Board, its personnel and its fair and liberal policy for encouraging the exhibition of livestock and farm products at county and state-wide shows and the ultimate establishment of a state-wide agricultural fair comparable to that of other states.

### Baltimore Markets

25. We deplore the congested conditions of the wholesale and commission markets at which our Maryland growers of vegetables have to market their crops in Baltimore; as graphically shown by the survey conducted by Dr. DeVault's Department of Economics of the University of Maryland.

We commend the movement started jointly by the Trucking organizations, the Extension Service, the Maryland State Farm Bureau, Anne Arundel County Farm Bureau and the Baltimore County Farm Bureau looking toward a solution of this problem.

We pledge ourselves to help devise and push to conclusion, plans to correct the intolerable conditions now prevailing in these markets.

### Price Maintenance

26. Whereas the Miller-Tydings Resale Price Maintenance Act, passed in the closing days of the last session of Congress, together with the so-

called Fair Trade Act of Maryland not only weakens the anti-trust laws, but enables manufacturers and distributors to fix prices without state or Federal supervision of any kind whatsoever, and in addition makes it illegal for articles to be sold at less than the prices fixed:

We urge the immediate repeal of the Miller-Tydings Act and the Maryland State Law erroneously called state "fair trade acts".

### Wage and Hour Legislation

27. We oppose the enactment of legislation similar to the Black Connery Bill raising wage rates especially of those groups whose wage rates are above a parity level with farm prices, thus adding unduly to the cost of distribution.

### University of Maryland

28. Resolve: That we endorse the splendid development and demonstrated leadership of the University of Maryland in serving all interests of rural life. We pledge our support for further research and extension work for the service of all our people.

### U. S. Department of Agriculture

29. We desire to register our disapproval of the transfer of any departments or bureaus from the U. S. Department of Agriculture to any other Federal department and also oppose the change in the name of the department of interior to that of conservation department.

### Bang's Appropriation

30. We urge that if there is any cut in the Federal appropriations for Bang's Disease eradication, it be such, as not to seriously curtail the orderly eradication of this disease as planned. We instruct our officers to wire a copy of this resolution to our U. S. Senators at once.

### Nitrogenous Fertilizer

31. We favor the manufacture of nitrogenous fertilizer by the Tennessee Valley Authority.

### Mr. Cockey

32. We wish to express our regret that Mr. Charles T. Cockey, Jr., was not able to attend this meeting, we have missed his valuable counsel and his genial comradeship. We instruct our Secretary to convey to him an expression of our love, esteem and our most sincere wishes for a speedy recovery.

### Mr. Carver

33. We have missed the help and assistance of our friend and co-worker Mr. M. F. Carver who is unable to attend this meeting. We instruct our Secretary to express to him our sympathy and our hope for his early recovery.

### Memorial

34. Since the call of Providence has removed from our midst during the year C. Ashby Duvall and George Zentz, outstanding leaders in our organization,

BE IT RESOLVED that we hereby register our deepest sorrow in the loss of our sincere friends and leaders, C. Ashby Duvall and George Zentz, men of sterling character, staunch supporters of the organization movement, and men who were loved by all who knew them.

BE IT FURTHER RESOLVED that copies of these resolutions be sent to the families of the deceased.

### Appreciation

35. We, the Maryland Farm Bureau in Convention assembled desire to express appreciation to the Mayor, Howard W. Jackson for his welcome to Baltimore.

We recognize with gratitude the contributions made to our program by President H. C. Byrd of the University of Maryland, F. R. Wilcox, Mrs. E. C. Dunning, M. D. Lincoln and J. O. Christianson.

We are grateful to the management and staff of the Lord Baltimore Hotel for their fine cooperation.

We extend our thanks also to all those who, as speakers, committee members and workers helped to make this twenty-second annual meeting such an outstanding success, and especially do we recognize the extra hours put in by President Nuttle, Secretary Wise, and others of the staff of our state organization.

P. C. Turner, *Chairman*
John Bushey
Ellis Bowen
W. R. C. Connick
W. T. Chaffey
Grenville Lewis
Fred Jones
Howard Leaverton
A. G. Ensor
Ralph Shockly
Roy Weagley
Linwood O. Jarrell
Roby Mullinix
D. B. McDowell
T. Roy Brooks

## ANNUAL MEETING OF THE MARYLAND AGRICULTURAL SOCIETY

**Lord Baltimore Hotel, January 14, 1938**

Secretary Wise read the call of the meeting.

December 20, 1937

To County Secretaries and
Affiliate and Associate Secretaries

### NOTICE OF ANNUAL MEETING OF THE EXECUTIVE COUNCIL OF THE MARYLAND AGRICULTURAL SOCIETY

Dear Sir:

The annual meeting of the Executive Council of the Maryland Agricultural Society will be held January 14, 1938 at 12:00 noon, Lord Baltimore Hotel, Baltimore, Maryland.

Blanks are enclosed for you to submit the credentials for the council members of your organization.

Very truly yours,
C. E. WISE, JR., *Secretary*
*Maryland Agricultural Society*

CEW:MD
Enc.

Secretary Wise read the minutes of the previous meeting which were duly approved.

Wilbert L. Smith presented the list of Council members.

Duly moved, seconded and carried that the following be seated as the Council for this meeting.

*Anne Arundel County*—O. F. Grimes, Arthur Jones; *Baltimore County*—P. C. Turner, Ridgely Todd, T. C. Sherrill;*Calvert County*—J. Ellis Bowen, Wm. P. Norfolk, Calvert C. Buckler; *Caroline County*—Linwood O. Jarrell, Byron Poore, Kennard Shultz; *Carroll County*—John S. Bushey, R. P. Buckman, Guy Carlisle; *Cecil County*—D. B. McDowell, R. G. MacDonald; *Charles County*—Samuel C. Linton, F. B. Bolton, L. A. Starkweather; *Dorchester County*—A. K. Austin, S. W. Linthicum, Reginald A. Jones; *Frederick County*—Alvie M. Etzler, Walter L. Hipkins, H. L. Davis; *Harford County*—Fred C. Jones, A. G. Ensor, Walter S. Spencer; *Howard County*—Roby H. Mullinix, H. Jones Baker, H. T. Musgrove; *Kent County*—H. S. Leaverton, H. T. Williams, H. S. Ford; *Montgomery County*—J. W. Jones, Ulysses Griffith, 4th, Granville J. Thompson; *Prince Georges County*—W. R. C. Connick, Wm. E. Duvall, Harry W. Townshend; *Queen Anne County*—J. W. Smith, B. P. Stafford, Chas. I. Boyle; *St. Marys County*—Grenville Lewis, Bernard Goodwin; *Somerset County*—M. F. Carver, Harry Keenan, Edward DeMar; *Talbot*

*County*—F. G. Shillinger, Wm. E. Sanger, J. F. Baker; *Washington County*—R.C.F. Weagley, Allan B. Seibert, Clarence B. Mason; *Wicomico County*—C. C. Phillips, Edgar Williams, Robert Clelland; *Worcester County*—Ralph Shockley, Clarence E. Baker, Rodney Bounds; *State Home and Community Chairman*—Mrs. R.C.F. Weagley; *Maryland State Poultry Council*—J. W. Snoddy, Mrs. W. W. Hopkins; *Maryland Cooperative Milk Producers, Inc.*—I. W. Heaps, F. F. Hering, R. G. Spoerlein; *Maryland State Horticultural Society*—H. C. Whiteford, G. Rust Canby; *Maryland Vegetable Growers Association*—Joshua Lynch, R. T. Merritt; *Hillsboro-Queen Anne Cooperative Corporation*—Charles I. Boyle, H. C. Whiteford; *Maryland Tobacco Growers Association*—Nelson Turner, Oden Sansbury, S. C. Linton; *Maryland Stockmen's Association*—J. K. Funk, Wm. J. Hines; *Maryland State Beekeepers Association*—none present; *Maryland Crop Improvement Association*—none present; *Maryland Horsbreeders' Association*—none present.

Dr. Symons presented the Treasurer's report.

## MARYLAND AGRICULTURAL SOCIETY—MARYLAND FARM BUREAU FEDERATION

Financial Statement for Fiscal Year 1936-1937

Appropriation for 1936-1937 ..... $3,350.00

Expenditures:

| Date | Payee | Classification | Expended |
|---|---|---|---|
| 1936 | | | |
| Oct. 23 | Md. Farm Bur. Fed. | Office Rent (Oct.) | $ 53.33 |
| 23 | Charles W. Burrier | Community Ex. (Balto. Livestock Show) | 25.00 |
| 23 | H. L. Carrigus | Community Ex. (Frederick Co.) | 35.00 |
| Nov. 30 | Ry. Express Agency | Office (Poultry Ex.) | 25.36 |
| 30 | P. D. Brown | Community Ex. (Charles and St. Marys Cos.) | 50.00 |
| 30 | R. S. Brown | Community Ex. (Talbot Co.) | 25.00 |
| 30 | H. M. Carroll | Community Ex. (Harford Co.) | 25.00 |
| 30 | H. R. Shoemaker | Community Ex. (Frederick Co.) | 25.00 |
| 30 | Md. Farm Bur. Fed. | Office Rent (Nov.) | 53.33 |
| Dec. 17 | John H. Carter | Community Ex. (Garrett Co.) | 51.50 |
| 17 | Stanley E. Day | Community Ex. (Anne Arundel Co.) | 25.00 |
| 17 | Harold A. Remsburg | Community Ex. (Washington Co.) | 6.25 |
| 1937 | | | |
| Jan. 18 | Henry C. Whiteford | Travel (Committee Meeting) | 5.28 |
| 18 | K. G. Connolly | Travel (Balto. An. Meeting) | 6.07 |
| 18 | Md. Farm Bur. Fed. | Office Rent (Dec.) | 53.33 |
| 18 | Md. Farm Bur. Fed. | Office Rent (Jan.) | 53.33 |
| 18 | Geo. W. Clendaniel | Community Ex. (Caroline Co.) | 25.00 |
| 18 | Horace B. Derrick | Community Ex. (Balto. Co.) | 12.50 |
| 25 | Day Printing Co. | Printing (An. Rpt.—Grange) | 205.00 |
| 25 | Md. Penitentiary | Printing (Programs An. meeting) | 47.25 |
| 25 | Henrietta D. Stonestreet | Printing (Reporting An. meetings) | 125.00 |
| 25 | Geary Eppley | Travel (Judge—An. Meeting) | 5.60 |
| 25 | Minnie M. Fyffe | Travel (Balto. An. Meeting) | 7.60 |

| Date | Payee | Classification | Expended |
|---|---|---|---|
| | 25—Fred. V. Gray | Travel (Address—An. Meeting) | 25.75 |
| | 25—R. G. Rothgeb | Travel (Judge—An. Meeting) | 5.70 |
| | 25—Geo. L. Schuster | Travel (Address—An. Meeting) | 8.62 |
| | 25—C. E. Wise | Travel (Nat. Meet.—Calif.) | 209.66 |
| | 25—Mrs. Paul Leatherman | Community Ex. (Howard Co.) | 25.00 |
| | 29—Torsch & Franz | Office (An. Corn & Potato Show) | 16.35 |
| | 29—Arthur R. Weed | Printing (Publicity An. Meet.) | 50.00 |
| | 29—Maurice A. Blake | Travel (Address Fruit Growers) | 20.00 |
| | 29—J. Harold Clark | Travel (Address Fruit Growers) | 21.25 |
| | 29—J. H. Gourley | Travel (Address Fruit Growers) | 35.90 |
| | 29—Laurenz Greene | Travel (Address Fruit Growers) | 54.00 |
| | 29—George L. Zundel | Travel (Address Fruit Growers) | 11.65 |
| | 29—Leone D. Derr | Travel (Balto. An. Meeting) | 7.30 |
| | 29—Dorothy Emerson | Travel (Balto. An. Meeting) | 12.46 |
| Feb. | 15—A. Lee Schrader | Travel (Md. Hort. Society) | 34.79 |
| | 15—Md. Farm Bur. Fed. | Office Rent (Feb.) | 53.33 |
| | 15—J. P. Brown | Community Ex. (Wicomico Co.) | 25.00 |
| Mar. | 5—Md. Farm Bur. Fed. | Office Rent (March) | 53.33 |
| | 5—R. K. Remsburg | Community Ex. (Washington Co.) | 6.25 |
| | 5—Md. Crop Improve. Assn. | Community Ex. (An. Corn & Potato Show) | 176.50 |
| Apr. | 9—Md. Penitentiary | Printing (Grange Book) | 35.88 |
| | 9—Margaret T. Johnson | Communication (Postage) | 75.00 |
| | 9—Md. Farm Bur. Fed. | Office Rent (April) | 53.33 |
| | 9—G. M. Mizell | Community Ex. (Washington Co.) | 6.25 |
| June | 8—Md. Farm Bur. Fed. | Office Rent (May) | 53.33 |
| | 8—Md. Farm Bur. Fed. | Office Rent (June) | 53.33 |
| | 8—M. D. Moore | Community Ex. (Washington Co.) | 6.35 |
| July | 28—Md. Farm Bur. Fed. | Office Rent (July) | 53.33 |
| Aug. | 12—Md. Farm Bur. Fed. | Office Rent (Aug.) | 53.33 |
| Sept. | 21—C. E. Wise, Jr. | Travel (N. E. Conf.—Ithaca) | 28.37 |
| | 21—T. B. Symons | Other Exp. (Labor, Rpts., An. & Committee Mtgs.) | 30.00 |

| Date | Payee | Classification | Expended |
|---|---|---|---|
| 21 | C. E. Wise | Other Exp. (Labor, Rpts., An. & Committee Meetings) | 25.00 |
| 21 | A. H. Snyder | Other Exp. (Labor, An. Rpt. & Prog.) | 15.00 |
| 21 | K. G. Connolly | Other Exp. (Labor, An. Rpt. & Accts.) | 15.00 |
| 21 | Md. Farm Bur. Fed. | Office Rent (Sept.) | 53.37 |
| 27 | 20th Century Ptg. Co. | Printing (An. Rpt.) | 905.63 |
| 27 | Dorothy Emerson | Community Ex. (Girls' Clubs) | 88.93 |

Total Appropriation ..... $3,350.00

This account is audited by the State Auditor.

Maryland Agricultural Society in account with State Fair Board:

Received from State Fair Board ..... $1,400.00



Expenditures:

1938

Jan. 11—Md. Crop Improve. Assn. ..... Winter Show

| | |
|---|---|
| Corn | $350 |
| Grain | 125 |

$ 475.00

| | | | |
|---|---|---|---|
| 11 | Md. Tobacco Growers Assn. | Winter Show | 100.00 |
| 11 | Md. Vegetable Growers Assn. | Winter Show | 150.00 |
| 11 | Md. St. Hort. Society | Winter Show | 200.00 |
| 11 | Md. St. Beekeepers Assn. | Winter Show | 50.00 |
| 11 | Md. St. Poultry Council | Winter Show | 425.00 |

Total Allotment ..... $1,400.00

T. B. SYMONS,
Treasurer.

It was moved by Mr. Funk, seconded by Mr. Linthicum, that the Treasurer's report be accepted as read, and the motion was carried.

Mr. Ensor moved the former officers be re-elected and Mr. Connick seconded the motion.

Mr. Pearce moved the nominations be closed and the motion was carried.

The Secretary of the meeting cast the ballot for the officers to be re-elected for 1938:

President—H. H. Nuttle
Vice-President—P. C. Turner
Secretary—C. E. Wise, Jr.
Treasurer—T. B. Symons.

Meeting adjourned at 1:15 p. m.

# Home and Community Department of Maryland Farm Bureau

**Wednesday Afternoon, January 12, 1938**

A most delightful luncheon was served to Home and Community Chairmen and State officials of the Maryland Farm Bureau in the Florentine Room of the Lord Baltimore Hotel, Baltimore, Md. on Wednesday, January 12th, 1938, at 12 o'clock noon. Mrs. Roy C. F. Weagley, our chairman, was our delightful hostess, and the luncheon was preceded by singing the "Doxology".

After the luncheon, the regular meeting was called in another part of the Florentine Room. Mrs. Weagley called the meeting to order and brought to us greetings from the Maryland Farm Bureau. The State roll was called by the secretary, all counties responding except three. Mr. Nuttle, our state president, then brought us greetings and a very worth while message. He told us of Mrs. Weagley, our chariman, being elected National secretary of the Associated Women of the National Farm Bureau; also, very modestly, of his appointment to the national board of directors. He also spoke of the possibility of Baltimore being the meeting place of the National meeting in 1938. The achievements of Maryland were most enthusiastically applauded.

The minutes of the last meeting and midyear meeting were read and approved. One verse of "America" was then sung by the group.

Mrs. Weagley then introduced to us Mrs. E. G. Dunning who opened her address so appropriately with the little poem, "Hello". She then told of her trip to the institute of Cooperation in Ames, Iowa, the past summer with her family in a trailer. She told of the first institute being held in Philadelphia in 1925; the second at Cornell in 1935, and the third in Ames, Iowa in 1937, both of which she attended. The aim of these institutes is to bridge the gap between producer and consumer and develop a greater solidarity of agricultural interests. Mrs. Dunning believes the leaders have overlooked the fact they are a veritable Niagara furnishing unlimited power. The organizations are broadening their visions and including the women. No women groups are studying producers problems. Farmer's interest in consumer's problems are only studied as they may effect production. She emphasized that, we as producers, must just as eagerly take up the study of producers' problems as the consumers takeup the problems of consumers.

The cooperative organizations must educate their members in order that they may understand the producers' problems. She said, women are just as interested and receptive as men. She made a general appeal that we organize to mobilize our forces to study and solve the problems of the gap between producer and consumer. We, as an adult group, should give youth more credit for their judgments. She said, "If you

take your children to the city on Saturday night, when everything is bright and at its best, also take them to the same town or city on Monday morning when it is at its worst. Teach the youth the glory and beauty of our industry—farming." Mrs. Dunning closed her address by saying, "It is my firm belief that when the philosophy of the American farmer takes its proper place in the life of the nation, the solving of many problems of our national existence will be more direct, more simple and more effective, because they will be based on the sound fundamental judgment of folks who think in terms of honesty and of sincerity and of depth".

A vocal solo, "Where My Caravan Has Rested" by Lohr, was then sung by Mrs. Spoerlein.

Mrs. McGolerick then gave a most interesting talk on her trip to Chicago and the National Public Speaking Contest, in which she won second place for Maryland. She told us first of the Regional Contest in which she won first place in the Southern region, then of the final contest. She also gave a brief outline of the Women's Conference which preceded the general convention proper. Mrs. Sargent's message to the women was the "Achievements of Associated Women", in which she made a comparison of our work to seedtime and harvest. She emphasized strongly the address by Miss Phillips—"Today's Challenge to Farm Women". We live in an age of changes and it is the farm woman's job to study these changes and adjust the farm home to them.

Mrs. McGolerick told us of Friday evening's program, "Lights and Shadows", also the banquet which was very unusual and interesting. She told of the various sightseeing trips around the city of Chicago and the places which were most interesting to her. In fact, we all had a most delightful trip with her "around the town".

The County Chairmen then retired for the election during which time Mrs. Spoerlein sung "Gypsy Love Song" by Victor Herbert.

Mrs. Davis, chairman of the voting delegates, gave the report of the election as follows:

Chairman—Mrs. Roy C. F. Weagley
Vice-Chairman—Mrs. Harry T. Williams.

Mrs. Weagley then appointed the secretary, Mrs. Randall Spoerlein.

A motion was made and seconded that we no longer be called "The Home and Community Committee but "The Associated Women of the Maryland Farm Bureau". This motion was passed by unanimous vote. It was then referred to Mrs. Weagley to be voted upon by the Directors of the State. A request was made for a constitution and by-laws for the Associated Women of the Maryland Farm Bureau.

By changing the name of our organization the names of the county chairmen will be changed to "County Directors of the Associated Women Maryland Farm Bureau".

Reports of work done in all the counties were then made by all the chairmen, which showed progress in the women's work all over the State.

Mrs. Weagley urged the women to furnish the social hour and refreshments at all local meetings.

After singing the "Farm Bureau Song" the meeting adjourned.

Secretary,

Anna S. Spoerlein
(Mrs. Randall Spoerlein)

## THE 1938 INSTITUTE OF COOPERATION

MRS. E. C. DUNNING

Madam Chairman, and Women of the Maryland Farm Bureau: With this poem entitled "Hullo", I greet you. (Poem—"When you meet a man ——")

Mrs. Weagley, your very able and gracious chairman, with whom I have had the most pleasant association for some years, and who I know has a sincere, conscientious and energetic interest in the activities of farm women, has asked me to tell you of my trip to the Institute of Cooperation during the past summer. I hope that I may be able to pass on to you some of the inspiration and pleasure and hope that came to me.

To those of you who may not be familiar with the Institute and its objectives, I bring the following paragraphs from the "Review of Reviews" for August, 1925. Charles W. Holman, then and now, secretary of the Institute of Cooperation, said, "its work may bring unlooked for results. Out of its sessions may develop in time a greater solidarity of agricultural interests; and in time, the consumers may learn to follow in the trail blazed by the farmer cooperators." I am going to add here that the consumers have not only learned to follow, but have stepped on ahead.

In that year, 1925, the first Institute of Cooperation was held at the University of Pennsylvania in Philadelphia. I did not attend but my husband did. Only two years before I had walked out of a purely academic atmosphere, where I had been student and teacher for many years, and into an entirely new life where even the ordinary terms of agriculture had little meaning for me. Anxious as I was to find my way into this new world which was my husband's business, I read and asked questions about everything that happened concerning it. Consequently, when the Institute came along, I learned a great deal about its organization and objectives. Since that time I have attended only two sessions, the one at Cornell in 1935 and the one at Ames, Iowa, this year. I have, however, read each year the accounts and speeches and comments that have appeared in the various farm papers, including the Cooperative Journal. When I returned from the Institute at Cornell two years ago, I wrote up the notes we had taken, and as I did, I wondered what an inventory would disclose concerning its accomplishments. I looked up this above mentioned article, and listed the objectives as stated in 1925.

The first:—To collect and make available a body of knowledge concerning the cooperative movement in America and other lands. I felt that

they had been successful in this objective.

Second:—To serve as a means of clarifying thought as to what the cooperative movement really is and of bringing about more harmony and unity of action among organizations directly or indirectly connected with cooperation. I felt that they had been outstandingly successful in this.

Third:—To serve as a means of training leaders and workers in the cooperative movement. I questioned their accomplishments in this objective, for it is my feeling, that as leaders, they have been too self-sufficient to be alert to possibilities in the way of new leaders and new workers; furthermore, they have made no outstanding move, as a group, to make the programs attractive to potential leaders.

Fourth:—To serve as a means of assisting educational institutions throughout this country to improve their teaching courses in cooperation and investigational work. On this, it is my belief, they score well. I think the holding of the Institute itself in University centers each year has directed this objective.

Fifth:—To focus the spirit of the cooperative movement as a means of community and national development. And it is on this last objective and its relation to the women of farm organizations that I am going to talk for a few minutes. It is here that I feel that the leadership must fall in the hands of farm women. Here, too, is the timely subject of what we are going to do to bridge the gap between the producer and the consumer, so that an intelligent understanding may be arrived at. Here it is, I believe, that the Institute of Cooperation and a great many other farm organizations have fallen down. I think the Farm Bureau has been more foresighted than many other groups. They have recognized the analogy of the farm home to the farm organization, and have realized that, just as there are places in the home where the man cannot as effectively do the job, so too, there are places in the organization where it takes a different type of leadership.

And so, when it became necessary last winter to give up a trip to Florida, and we decided to go to the Institute instead, I determined to check up on former observations, in an effort to find out if many of our present organization troubles could not be traced to the lack of development of this fifth objective. Knowing full well, that no amount of skill in administration and no perfection of organization, can take the place of human understanding, I seriously questioned whether social and educational matters were being given the attention necessary to develop a well-balanced organization. Knowing, too, that women were the backbone of this work, I was anxious to know whether some of the signs of the times that I had been observing, had made any impression on these many leaders who were to be assembled.

I want to say just a word about the trip, for I believe you may be interested, and some of you may some of these days be wondering, as I did, just what there was to this adventure of trailering, for we trail-

ered, with the family, to Iowa, and after the Institute, headed north through Minnesota, Wisconsin and Michigan, crossed into Canada, came east through North Bay to Ottawa and back down home through New York.

We rented a trailer and with the family, a twelve year old son and nine year old twin daughters set out with many hopes and many misgivings. I hasten to add that I think most of the misgivings were mine for having allowed my family to divorce me from some of my good old New England heritage of common sense. I suppose that a bit of the Irish in me had come to the rescue when I consented to be a party to such an adventure. Be that as it may, you have the answer to my final conclusion when I say that if we can ever afford a summer home, it will be a trailer to go a-gypsying with. I could talk to you long and longingly about the details of trailer life, its woes and its joys, its funny incidents and its scary ones, such as the evening we arrived in Thesalan, a small village in the north woods of Canada and found the Indians from a nearby reservation celebrating in a very abandoned and liquid way their holiday, which they call Dominion Day, and which corresponds to our 4th of July. We were much interested and entertained, but not just sure what the night was to bring forth. However, they did not disturb us, and the pine forest on the northern shore of Lake Michigan protected and refreshed us for another day's journey over the none too good roads through the wilderness.

I have not time now for more details, but if you ever doubt the worthwhileness of a trailer, rent one for a trip, and if you have any Indian or Gypsy in you at all, you will come back prepared to buy one.

To get back to the Institute and my bit of research, I am going to make a general statement first and then explain. I believe that the leaders are unconsciously developing an appreciation of the fact that they have overlooked a veritable Niagara of potential power, capable of being converted into a tremendous tower of cooperative thought and service. There has developed in their minds a questioning attitude concerning the women and the organization. They do not quite take it for granted, as they did a few years ago, that we do not fit into the picture at all. And I feel that this is a sign of an awakening. Individually they respond appreciatively and splendidly. Collectively, they shut up like a clam, perhaps because they are each afraid of the other. I am not, however, going to place all of the responsibility on the shoulders of the men folks, because it does not all belong there. Part of it is our own fault, and the same reason that has helped to bring about the awakening on the part of the men folks has made us aware of our own short-comings.

And now I will tell you why I believe that the organizations are broadening their vision, so as to include us in it, and why we must make ready to accept the challenge. *The Consumers Organizations are Growing by Leaps and Bounds.* In every city and village you will find consumer study groups representing almost every woman's organization in

existence. Right here in Baltimore there are dozens of them. Groups of all sorts and degrees of intelligence are studying consumers' problems. How many groups of women from any organization are studying producers' problems? Do you know of any? There are some producers studying consumers problems, but unfortunately, too many of those same producers do not understand their own problems. While it is true that farm folks are to a certain extent consumers, their source of income is from production, and their interest in consumer problems as it affects themselves, is only a matter of saving some of what they clear in their business of production. Let me repeat;—How Many etc. "But," you say, "When consumers better understand the business of buying, and know more about the quality of the things they buy, it will create a greater demand for better products and eventually help us." And it will, eventually, perhaps, if we are willing to make two assumptions.

If we are willing to assume, first, that all consumers are intelligent and earnest and honest enough to really study and understand the basic fundamentals of what constitutes real thrift in buying. But that assumption we dare not make, because, while some study groups and some speakers are doing careful research work, and presenting to their groups only good, sound and factual evidence, the large majority of them have gone at the thing with the typical bargain store attitude of getting something cheaper, regardless of who pays the bill, or of its effect on society as a whole. In these cases you may rest assured that the producer is going to pay the bill unless he gets himself into a position where his organized strength is equal to that of the consumer. A recent illustration of this was the New York milk strike, while it was not effective and perhaps did not mean a great deal of loss to the producer, for it only lasted a few days, we must remember that it was only a first attempt, and these city consumer folks are persistent. Rest assured this will not be the last attempt to get milk or meat or tobacco at cheaper prices, and if we continue to be as indifferent as we have been we might just as well say, "here is my bank book, my check book and my pocket book, here too is my home and my family, we are your slaves, your producers; our children the servants of your children. You have the votes, you are organized, you are fine political support, while we poll fewer votes, are less apt to fight for ourselves, are uninformed and unorganized, therefore, of not much concern to people looking for votes." Our men folks cannot do much in this field unless we are willing to line up with them. The consumer groups are largely women, and we must take up the matter of our producer study groups as eagerly as our city sisters have taken up theirs. And always remember that a wideawake group does not limit itself to studying one side of the issue, we must look well into the consumer needs to get our own proper station and objective.

The second assumption we must make if we are willing to trust our luck to the consumer, is that the manufacturers of cheaper and inferior products are asleep. And, if you think they are, let me tell you what

Mr. Holman said during the last hour of the Institute, when he made an appeal to the cooperative leaders to mobilize their women strength, and told why. Last spring in Washington, a bill which would very materially have reduced the tariff on the materials that go to make up oleomargarine was on the verge of passing. The powerful lobby of the Federation of Women's Clubs, representing the consumer groups, was pushing it hard. The consumer groups had had, we may well believe, the tutorship of the very wealthy and very wideawake oleo interests, who had schemed to take advantage of the lack of research of the consumer group and the lack of organization of the producer group. Mr. Holman, through his connection with the National Milk Producers' Federation, got word of the thing at almost the last minute. He got in touch with the only dairy cooperative that has been foresighted enough to train and educate its women in matters of economics and legislation, and Vera McCrea of the Dairymen's League with her member assistants jumped into the breach and swung back the action which would have taken real dollars and cents out of the pocket of everyone of you here who derives any income from the dairy industry. That is but one illustration to show you that we dare not assume that the interests representing inferior and substitute products are asleep.

Therefore, I say, that we cannot assume that consumers groups, even though we are members of them ourselves, as we should be, are going to protect and to promote producer interests. It is you who are producers and chiefly you women of the producer organizations who are going to have to accept the responsibility of meeting this emergency.

For some time men have had a feeling that somehow they should make use of the woman power in their organizations, but they have been at a loss to understand just how to do it. Right now, it seems to me is the psychological moment. Right here is a great need, a great emergency, that the men cannot meet, because they are dealing largely with women's groups.

When you have faced and accepted this responsibility, your organization must provide material in the way of speakers and literature to help you the better to go about this research into the economics and politics of their business, for I think we should generally recognize the premise that the man or the organization is the logical official representative of the business of the family, and that we are his associates. The organization must make a way for you to develop the ability to speak before groups and to write articles for publication. The more intelligent of the consumer groups, such as those conducted by the American Association of University Women, are very anxious to have women talk to them of the producer interests. They realize that whatever affects the level of living of the producer ultimately affects the standards of society as a whole. They are interested in reducing their own cost of living, of course, but not at the expense of the producer.

The various state and national agencies who are trying, mostly earn-

estly, to get at the real truth of matters pertaining to public welfare, are handicapped, because they cannot get enough members from the producers groups to appear at a public hearing to give them a fair perspective of both sides of the issue. For instance, the milk control boards, and I use the dairy interests as an illustration, simply because I happen to know more about them, since my husband is associated with a dairy marketing association, find it a simple matter to get any number of women to represent the consumer point of view at a public hearing and to tell tales of woe and unemployment and high cost of living, but what woman here will volunteer to present the producer point of view at a public hearing, to tell why you feel the retail price of milk and meat and cotton and tobacco should not be lowered. Some, of course, but not nearly enough to go round when you consider that the organized groups of consumers run well into the thousands.

Yes, consumers and producers must come to an understanding of each other's problems, but so far it is the consumers who have done most of the informing. The time will not come for a long time, perhaps never, when there can be complete unity of interests. Just as long as the consumer will try to get food and other materials as cheap as he can, and just as long as the producer will try to get as much for his products as he can, just so long will there be a sharp separation of their interests. It is as fundamental as the difference between black and white. In all the years of European Cooperation, they have never been able to bridge that gap, but they have arrived, and we shall have to arrive at a better understanding of each other.

One further thought I must bring you from the Institute, and then I am through. A general appeal to organizations to mobilize their youth. And here is another place where I do not believe the men folks can get along without us. Always since time immemorial the training and education and the building of character has been the mother's job. We are helped, of course, by the support and suggestions and encouragement of our men folks, but we must never forget that they have a full-time job in bringing home the bacon. After all, they have a right to expect that we shall shoulder the responsibility for our job, even when they are about. We often do not understand the discouraging influences of their work-a-day world.

It is rather a trite thing to say that an organization that builds for one generation only is doomed to failure. We know it is true; and yet as we look about us in organization meetings, we see mostly bald heads and gray heads. We see few of those who should be our farm leaders ten and twenty years from now. Don't you think that we, as women, will have to shoulder some of the responsibility of getting these boys and girls into our organizations, where they can learn of the purposes and methods of organized agriculture? It will mean a great deal of planning; if we can't make the meetings interesting to them we cannot expect them to come back. We will have to step out of some of our maturer activities

and ways of doing things and discard a good many of our so-called common sense ideas. They don't think much of some of our ideas and I can't say that I blame them, sometimes. We feel so smart and sure of ourselves and give them so little credit for good judgment and common sense. I have learned to greatly respect the judgment of children. And you can just bet that if we meet them half way and really give them a chance, they will be glad to come back again and again.

I believe, however, that we will have to go a step further than that. I believe that we shall have to begin to train ourselves to appreciate the right attitude before we can get them interested in our industry. One of the things that hurts me more than anything I hear as I go to farm meetings is to hear farm mothers and fathers say, "I don't want my children to be farmers." Are they ashamed of the industry that renders the greatest service to mankind? Ashamed of the industry on which our ancestors builded this America? The American Colonial Farmer was the most respected of all people. "Oh, but you say, it is such hard work." And I have to agree. But I must also add that anything is hard work if it is worth while and if you make a success of it. "Yes", you say, "but I want her to go to the city and get a job." Mothers, do you know what the city and the factory do to your boy and your girl? It takes them out of your life, uses them when it is prosperous,—and then, when it can no longer find a place for them during a depression, throws them back on your doorstep, worn and weary and bitter and sick of life,—or else it throws them on its dump of relief and bread lines. Mothers, do you take your boys and your girls to town on Saturday night, when the lights are bright and the stores and theatres are at their best, and when the material and moral filth are covered by darkness? If you do, don't let it rest at that, for it is not fair to them. You are painting only the brightest side of a picture. Take them sometime on Monday morning when the light of day is merciless. Take them to the back alleys and the water fronts. Show them what the city does with its boys and girls when it has no further need for them. But that is far fetched, you say. My girl and my boy will always have a place in the city. I hope so, if they go. But before they go, talk to some of the people who have been doing investigational work the past few years. You will open your eyes and ears as I did, to things you never expected to see or hear. I have, and I sometimes wish I hadn't, but only thus do we learn to understand and appreciate our own advantages.

What do you wish for your child? Happiness?

I have taught in a reformatory and in an exclusive private school in New England.

I have taught in the city and in the country. I have taught in the publice schools of Baltimore and in the University of Maryland. I have taught the sons and daughters of some of you who are here today. I have, for the past fifteen years been in and out of the homes of farm folks. I have found more happiness in the farm homes than anywhere I have

been. I have with this thought in mind, questioned many who have traveled over wide spaces, in many climes and stations of life. And always, the answers verified my conclusion that there is more happiness in the farm homes of America than anywhere on earth.

Is your objective for that boy and that girl a life of service to mankind? And I say again that there is no greater service to mankind than to feed the world. You want him to be a doctor, and a fine profession it is. But more important than the farmer? A hundred times, No. What service can the doctor render without the farmer to feed him and his patients? You want him to be a lawyer? (Just what service does he render to mankind? I wonder and I question?) A merchant, then, but of what use is a merchant unless the farmer provides him with something to buy and to sell and to eat? A scientist? Useful only when alive and with materials to work with. A politician? In the same class as the lawyer unless he becomes a statesman, and Statesmanship has become a forgotten profession. I sometimes wonder if perhaps it is because in the past several decades the farmer has dropped out of public life. You know in early American History most of our statesmen came from farms.

No—mothers and fathers, don't misguide that boy and that girl. Teach them the glory of your life—of your industry. Teach them of its beauty, of its dependability, and teach them of the pride of their heritage. Teach them that here, close to the soil which they must help to build, lies the best the world has to offer; its greatest opportunities and its greatest work.

From the Institute then, I bring you these messages!

First,—Help your men folks to educate, to organize and to legislate the producer strength of the nation, in order that you may better understand and cooperate with the consumers of the nation in a unified program to ease the friction of today and promote the spirit of the season just past, that of peace on earth, good-will toward men. Thus does the economic field of the men blend with the social field of the women in the development of a balanced life and a balanced organization.

Second,—Help your men folks by changing your attitude toward the importance of their life and their industry, and passing on the heritage of its splendor and importance to your children.

It is my firm belief that when the philosophy of the American farmer takes its proper place in the life of the nation, the solving of many problems of our national existence will be more direct, more simple and more effective, because they will be based on the sound fundamental judgment of folks who think in terms of honesty and of sincerity and of depth.

MINUTES OF

# Baltimore 4-H Club Leaders' Conference

## JANUARY 12, 1938

The annual 4-H Club Leaders' Conference was held this year in the ballroom of the Southern Hotel.

Mylo Downey, Assistant in Club Work, called the meeting to order and Lee Howes stated that the 4-H Club Committee appointed to draw up recommendations was ready with its report.

Rufus King, Chairman of this Committee, took the chair and presided during the rest of the conference.

Mr. Downey, substituting for Dr. T. B. Symons, presented charts explaining the plans for organizing County and State 4-H Councils.

The meeting was opened for discussions and questions. The following were considered:

A. How many counties take steps to form an Older 4-H Club Division?
B. What are the advantages of organizing a County 4-H Council?
C. What are the purposes of a state 4-H Council?
D. Suggestions for Program Planning.

A motion was made to form a State Council of 4-H Clubs; this motion was adopted.

A motion was adopted that in counties where there is no County 4-H Council with a Senior Division whose officers form the official board, that presidents of the girls' clubs and presidents of the boys' clubs together with the entire county extension agent staff shall be the official board of such a County Council. It was brought out in the discussion of this motion that the forming of such an official board of present membership would be a nucleus from which would grow in due time a Senior Division of 4-H Club members.

An amendment was adopted that officers of now existent separate 4-H organizations for girls' and for boys' clubs respectively should be permitted to send voting delegates to the State 4-H Council. This amendment was reconsidered at the afternoon and rejected.

A motion was adopted that the present 4-H Committee:

A. Draw up plans for a State 4-H Council, including the drafting of a constitution.
B. Plan the program for the Older 4-H Club group at 1938 Club Week.
C. Serve as official members of this body until further steps are taken for State Organization and election of officers.

Attendance at morning meeting—80.

## AFTERNOON SESSION—2 P. M.

A report of the business of the morning was read and approved.

Dr. Symons gave an address on the possibilities for 4-H Club Work in Maryland. He presented a chart citing the following figures:

| | | |
|---|---|---|
| Total rural population of Maryland (ages 10-19) | 108,630 | (1930) |
| 4-H membership for Maryland (white) | 7,588 | (1936) |
| Total Older Youth population of Maryland (19-24) | 44,015 | (1930) |
| Total present memebrship in Older 4-H Club Groups in Maryland | 554 | (1937) |

Dr. Symons challenged 4-H club members to capitalize the latent power of the farm boys and girls. A request was made that Dr. Symons' address be sent to the County 4-H Councils for further discussion.

Dr. G. S. Langford addressed the conference on the subject of Japanese beetle control. With the aid of statistics and illustrative material, Dr. Langford showed how destructive the Japanese beetle can be. He also told of control methods and of the need for cooperation if such methods are to be successful. Dr. Langford agreed to furnish illustrative material to the County 4-H Councils on request.

Mr. Paul Nystrom addressed the meeting on the subject of Soil Conservation showing, with the use of charts, why there is need for immediate action to conserve our top soil. He convinced the group that it is most important that rural youth now become acquainted with the entire situation, the history of present national conservation programs and the probable action they may be called upon to take regarding the problems in the future.

A motion was adopted that the Japanese beetle control program and the Soil Conservation program be accepted as state-wide programs for older 4-H group participation; that each county shall stress the program which seems most important to it, calling on the State Staff to assist in carrying out these programs.

A motion was adopted that we endeavor to reach out and enroll more rural girls and boys of Maryland to participate in the extension programs offered to them in 1938.

Recommended by Mr. E. G. Jenkins, State Boys' Club Agent:

A. That two or more of the State staff shall meet with the county staff to discuss the county situation before any county organization of older 4-H club members shall be formed in counties where no such organization now exists.

B. That two or more members of the State Staff shall meet with the older 4-H club members and county extension staff before the final adoption of a new county constitution.

C. That in counties where expansion is proposed or expected some members of the State staff and all members of the county staff shall meet together to talk over constitution plans with the County Executive Committee.

The meeting adjourned as 4 p. m.

The following voting delegates attended the conference:

| *Name* | *Address* | *County* | *Additional delegates* |
|---|---|---|---|
| Margaret Ringler | Flintstone | Allegany | 3 |
| Leonard Llewellyn | McCoole | " | |
| Mrs. Elizabeth Twining Scott | Sykesville | Baltimore | |
| Albin Duvall | Westminster | Carroll | 6 |
| Merl Myers | Woodbine | " | |
| George Stauffer | Walkersville | Frederick | |
| Dorothy Fouche | Adamstown | " | |
| Maurice Ahalt (alternate) | Middletown | " | |
| Ruth Nicodemus (alternate) | Monrovia | " | |
| Vernon Bandel | Ellicott City | Howard | 10 |
| Geraldine Brown | Woodstock | " | |
| Robert Sutton | Kennedyville | Kent | |
| Robert Moffett | Chestertown | " | |
| Victor Hendrickson (alternate) | " | " | |
| Virginia Dulin (Alternate) | " | " | |
| Mary Johns | Beltsville | Prince Georges | 3 |
| Mary Jenkins | Anacostia, D.C., No. 4 | " " | |
| Helen Coleman | Chestertown | Queen Annes | 5 |
| Linwood Everett | Sudlersville | " " | |
| Bernice Baker | Lydia | Washington | 4 |
| Donald Warrenfeltz | Hagerstown, No. 1 | " | |
| Jack Jarrell | Ridgely | Caroline | 2 |
| Thomas Ober | Henderson | " | |

MARY HUTCHINSON, Talbot County, *Acting Secretary.*

# PROCEEDINGS

OF THE

## FORTIETH ANNUAL MEETING

# Maryland State Horticultural Society

**Lord Baltimore Hotel, Baltimore, Maryland**
**January 11 and 12, 1938**

President C. E. Bryan called the meeting to order at 10:15 A.M. and called for the Secretary-Treasurer's report.

## REPORT OF THE SECRETARY

A. F. VIERHELLER
College Park, Maryland

In the field of legislation, this has been a year when Congress has considered many laws of interest to the grower. Possibly the most important item was House Bill No. 300, (Senate Bill No. 5) having to do with Pure Foods and Drugs. This Bill passed the House with practically all recommended changes suggested by International Apple Association. Maryland representatives on Committees considering these Bills were contacted, and promised their support of these Bills. There was also some correpsondence with members of Congress in reference to the Social Security Act H. R. 5807, in defining "agricultural labor", and also the Pettengill Bill as related to long and short haul freight rates. These matters were given attention by this Society at the request of the Eastern Fruit Growers' Council, an organization of several of the Eastern and Mid-Western Horticultural Societies.

The annual Summer Field Meeting was a fine one. Mr. C. E. Bryan entertained the fruit growers of the State at his orchards at Havre de Grace. He showed how efficiency of spraying had been increased by good water supply, and convenient filling stations in the orchard, where a 300 gallon tank was filled with spray material in less than 3 minutes. There were discussions of fruit packages, and demonstrations of orchard machinery. Following lunch, Mr. C. R. Miller reported on apple advertising. Then followed a discussion of Government purchase of surplus apples, after which a proposal was sent to the Federal Surplus Commodity Corporation regarding this matter. It was suggested that the Government purchase canned apples, leaving the better grades for the grower to market as fresh fruit.

Last year, the Maryland Society voted to ask other Societies in the surrounding States to form a central meeting in the four States. It was also voted to ask these Societies to combine their publications into one monthly edition. The last proposition was not agreeable, but the joint meeting was acceptable to the other Societies. This meeting was not to displace the State meetings, but was a gesture toward cooperation between growers of these States in solving their larger, mutual problems. The States of Pennsylvania, West Virginia, Virginia and Maryland were included in this plan, and New Jersey and Delaware were invited to participate. The Executive Committee of the Maryland Society and representatives of the West Virginia Horticultural Society met on December 1, 1937, and laid plans for the first meeting of the organization to be known as The Middle Atlantic Fruit Growers' Conference. Under the vigorous leadership of Mr. C. E. Bryan, this meeting was held in Washington, D.C. on January 4 and 5, 1938, and after an excellent meeting, a permanent organization was set up. It is hoped that much good will come from this organization.

Appalachian Apples, our advertising plan, in cooperation with Pennsylvania, West Virginia and Virginia, is doing fine work. We need more grower support in Maryland and even now it is not too late to subscribe your crop to this worthy cause.

We also need more members in this Society. Things are happening rapidly, these days, and the combined voice of all fruit growers is needed if we are to be heard in affairs affecting our industry.

I want to pay a tribute to our President, Mr. Bryan. He has done a fine job during his term of office, and although he is a busy man, his work in connection with many things that have had to do with improving the fruit industry should be deeply appreciated by every fruit grower.

A secretary's job would be difficult without the help of the officers and Executive Committee, and I want to thank these men for their cooperation during the past year.

We hope that you will enjoy the program, and please remember the Fruit Show in connection with these meetings.

## REPORT OF THE TREASURER

A. F. VIERHELLER

College Park, Md.

Our cash balance last January 1 was $418.29, and on January 1, 1938, the balance on hand was $726.42, of which $173.12 was in savings account. Our unpaid bills, which have not been billed to us, amount to $103.75, leaving a net balance of $622.67. The books are open for inspection at any time, and I ask that a Committee be appointed to audit the accounts.

## PRESIDENT'S ADDRESS

C. E. BRYAN
Havre de Grace, Maryland

The speaker recalled that at last year's meeting, he had warned growers against being lulled into a sense of false security, because of the profitable season resulting from a short crop, since another year would probably bring overproduction, with all the grief that goes with it. One year later this condition has come about, and growers have failed to profit by past experience.

Because any kind of apples could be sold last season, we have seen an enormous quantity of poor fruit produced this year, and the market flooded with it. As the price of poor apples establishes the market, it has been impossible to dispose of a proper proportion of Number One fruit, and there is more on storage than can possibly be disposed of at a living price.

Because we have put so much junk on the market, our customers have turned to apples produced 3,000 miles away. The Northwest has come across the Continent to supply the demand which should be ours. The public has come to demand a standardized product, and practically in every line this demand is being met. If we are to get and retain our share of the business, our growers must learn to grade and pack well and honestly, according to fixed standards.

These conditions exist not only in Maryland, but throughout the east. That is one reason for the organization of the Middle Atlantic Fruit Growers Conference. We want to tell our growers the best methods of growing and packing good apples. We want to keep them informed as to the best methods of selling their products. All industry profits by exchange of ideas, and by co-operation. We needlessly handicap ourselves, when we neglect modern, business-like methods. The Middle Atlantic Fruit Growers Conference has made a good start, and with loyal support can be of immense value to the growers of New Jersey, Delaware, Pensylvania, Maryland, Virginia, and West Virginia. Every fruit grower in Maryland should work with it. It takes unified, co-operative action, to get best results in merchandizing and advertising, and to deal effectively with matters of transportation, spray residue, government regulation, etc.

It is not the number of bushels of apples we raise, that counts. It is the number of bushels we can sell at a price in excess of cost.

It is not the number of dollars we spend, which matters. It is a question of the way we spend them, so that every dollar spent will bring us back a little more than a dollar. Each and every one of us would be better off, if we reduced our plantings to the point where we could maintain them in the highest state of efficient production.

# NEW RESULTS WITH SPRAY MATERIALS AND METHODS FOR CONTROL OF THE MORE SERIOUS APPLE AND PEACH DISEASES

JOHN W. ROBERTS, Principal Pathologist, Division of Fruit and Vegetable Diseases, Bureau of Plant Industry, U. S. Department of Agriculture, Washington, D.C.

For the past six years the speaker and his associates have devoted considerable time to the development of copper fungicides which it was hoped would take the place of lime-sulphur solution, elemental sulphurs, and bordeaux mixture in the spring and early summer applications on apples. It was thought that among the so-called "insoluble copper compounds" one might be found which would be effective in the control of apple scab, for instance, and at the same time be less injurious than the commonly used lime-sulphur solution.

Because, in preliminary trials, copper phosphate appeared more promising than the oxides, silicates, and other coppers, particular attention has been given to it in most of our experiments. Copper phosphate, used at the rate of 2 pounds to 50 gallons of water to which 4 pounds of hydrated lime and 2 pounds of bentonite are added to keep the copper phosphate in suspension, has not been dependable in the control of apple scab when used in all the scab applications. It has greatly decreased scab infection but is not as effective as lime-sulphur solution and should not be used in preblossom and calyx applications on varieties which are even moderately susceptible to scab. In our experiments, however, it has been a fairly satisfactory spray, even on scab-susceptible varieties, in applications following the calyx spray, when lime-sulphur solution was used in the prebloom and calyx applications. Copper phosphate has regularly caused less russeting of fruit and much less foliage injury than lime-sulphur. It has controlled mild cases of blotch and appears to be effective against such minor diseases as leaf-spot and sooty blotch. It is not effective against bitter-rot.

In general, copper phosphate may be used as an example for all the "insoluble" copper sprays. In their present stage of development, those that are of such low solubility as to be practically noninjurious, are not sufficiently effective against apple scab when used in all applications, while those of higher solubility are apt to cause severe russeting and foliage injury. The more soluble coppers, such as the oxychloride and oxalate, are apt to cause severe injury, whereas the less soluble ones, such as the phosphate and silicate, are useful only in after-bloom applications.

On pears in the Hood River district of Oregon, copper phosphate has given good control of scab without the severe injury caused by the lime-sulphur, elemental sulphur, and bordeaux mixture sprays, injury which prevents their use. We have also had good results with copper phosphate in the control of the common pear leaf-blight on Kieffer and Garber at our field station near Beltsville, Maryland. The foliage of

these trees was uninjured by the spray and was exceptionally fine. The fruit was practically without the russet which was severe in the lime-sulphur and bordeaux mixture plots.

Copper phosphate, in common with bordeaux mixture and probably all copper sprays is too dangerous for use on peaches.

The less soluble of these copper sprays may be improved by some of the newer spreaders and stickers, but here again it is quite possible that injuries to fruit and foliage may also be increased. Many new spreaders and stickers are coming on the market, and some of them may be just what we have been looking for. Lime should be used with all these copper sprays.

Lime-sulphur still remains the standard fungicide for the control of scab on susceptible varieties of apple. We, in common with your own and other experiment stations, are recommending a 1-to-50 dilution in place of the 1¼-to-50 and 1½-to-50 dilutions recommended in previous years. This reduction is largely due to the use of improved spray machinery and heavier dosage. Control is sacrificed but risk of injury is decreased if the dilution goes much higher than 1-to-50.

The elemental-sulphur sprays are being improved constantly, but in our experiments have not been as dependable as lime-sulphur solution for the control of severe cases of apple scab. At times they have caused severe injury to apple foliage, but generally are less injurious to both fruit and foliage than lime-sulphur solution. They are especially useful on varieties easily injured by lime-sulphur solution and that are not particularly subject to scab. They are, of course, standard sprays for the control of peach brown-rot and scab.

The sulphurs are sometimes objectionable in that they cannot be safely used with, or within about two weeks before, the oil-containing sprays which entomologists recommend for codling-moth control.

Zinc-lime is widely used as a preventive of arsenical injury to the peach, as a preventive of peach bacterial spot, and as a remedy for various nonparasitic diseases of fruit trees and other plants. We had hopes that the fungicidally more powerful copper phosphate might take the place of zinc-lime for the spraying of peaches, but the risk of injury is too great to warrant recommending it. Zinc-lime is so far, the only spray developed for the control of bacterial spot which can be used repeatedly without danger of causing greater damage than the disease itself. A curious effect of zinc-lime which we have observed year after year in various parts of the country, including the Beltsville, Maryland, station, is that peach trees sprayed with zinc-lime hold their leaves from one to two weeks later in the fall than peach trees sprayed with sulphur or with nothing at all, even when no leaf diseases are present.

### Spreaders and Stickers

Theoretically, it would seem possible to increase the efficiency of a fungicide by the addition of something that would make it stick for a longer period of time or would cause the drops of sprays to "spread out"

so as to form a continuous film of nearly uniform thickness. In actual practice, spreaders and stickers for fungicides have been disappointing. Improvements have not been as great as hoped. In no case has any fungicide been much improved, and in some cases fungicidal quality has been lowered. Vegetable oils, for instance, reduce the fungicidal value of weak copper sprays, even though they build up a heavy, persistent coating on fruit and foliage. Some spreaders apparently reduce efficiency by causing excessive run-off, while others, even though building up a heavy, well conditioned residue, apparently reduce efficiency by coating the fungicide particles with a film that prevents contact with spores.

For fungicides, casein and soaps are the most commonly used spreaders. Oils should not be used with sulphur or with lime-sulphur during the growing season, because sulphur, dissolving in the oil, may cause serious injury.

Chemical manufacturers are introducing for experimental use a vast assortment of complex organic chemicals, some of which seem promising as spreaders. It is in this field, too, that a great deal of work is being done to develop new fungicides radically different from those now in use.

Since the Maryland Agricultural Experiment Station puts out an excellent spray calendar, there is no need for me to discuss spray schedules. I merely wish to stress certain things mentioned in the calendar or comment on certain things not contained in it.

In spraying apples susceptible to scab, lime-sulphur solution not weaker than 1 to 50 should be used in preblossom applications, at least, and preferably in the calyx spray, before switching over to a milder fungicide such as wettable sulphur or possibly one of the new copper sprays. These new copper sprays are worthy of trial in a small way. At least an equal quantity of lime should be used with them. Such a combination would control scab, leaf-spot, Brooks or Phoma fruit-spot, mild cases of blotch, sooty-blotch, and their minor diseases. If bitter-rot has been present in the orchard the grower should use bordeaux mixture, beginning early in June. Bordeaux mixture for use against bitter-rot should contain not less than 3 pounds of bluestone to 50 gallons of spray, and should be applied at intervals of 2 weeks, beginning not later than June 15. If bitter-rot has not been present in an orchard, but, because of its presence in the neighborhood, a spray is desired which will prevent its becoming established ,a single application of a 2-4-50 bordeaux in late June will usually be effective; an additional one in early July is desirable. Incidentally, the bitter-rot sprays are very effective in the control of Brooks or Phoma spot, and sooty-blotch or cloud.

In the control of fruit-tree diseases, one of the most difficult questions to answer is: Does it pay to attempt the removal of diseased leaves and fruit in the control of such diseases as apple scab and bitter-rot?

In the case of apple scab, it seems impossible to prove experimentally whether "cleaning up" is a valuable supplement to spraying or not. It is our impression that it is sometimes of some value, but usually is of doubtful value. It cannot be sufficiently well done to permit the grower

to omit a spray or to use one of the milder sprays. Scab lesions are fairly common on twigs, but as compared with leaves, do not appear to be an important source of infection, because they appear to produce spores scantily in the spring and not until after the calyx spray has been applied. On transplanted trees such as nursery stock, however, they serve to carry the disease along with the trees.

In the case of orchards *heavily* infected with bitter-rot, "cleaning up" has been shown to be effective in reducing the number of initial infections down to where spraying gave effective control. In the East, we have not found bitter-rot cankers except in north Georgia, but we have some reasons for thinking that the bitter-rot fungus may over-winter in obscure lesions on twigs.

No doubt many of you suffered considerable loss from peach brown-rot last season because of conditions favorable to the rot at the time Elbertas were ripening. A light spray containing sulphur, without the addition of lime or arsenate of lead, is useful in preventing rot under such conditions. One or 2 pounds of sulphur in 50 gallons is sufficient for this spray and leaves little residue. Sulphur dust is also quite effective at ripening time, whether applied to the fruit on the trees or to the picked fruit by means of a blower attachment to the grading machine, The latter should help to make up for any increased susceptibility to rot brought about by brushing off of the hairs or fuzz. In the control of peach scab, the most important single spray is the one that comes about two weeks after the shucks are shed. If this spray is delayed too long, scab may get a start and even get out of hand.

For the control of bacterial spot of peach it is necessary to make applications of zinc-lime at 2-week intervals beginning at petal-fall and continuing until 5 to 7 applications have been made. Zinc-lime may be combined with the curculio and scab-brown rot sprays. It largely prevents arsenical injury when so combined. Copper sprays would be more effective, but any that we have ever tried have caused severe injury.

Again the question arises: How useful is orchard sanitation in the control of brown-rot, scab, and bacterial spot? In the case of scab and bacterial spot the results of our experiments have been negative. In the case of brown-rot the results are somewhat better. Removal of mummied peaches from trees directly after picking prevents the fungus from growing through the stem and killing the twig. Removal of ground mummies seems to reduce blossom blight, but this has not been proved experimentally.

Nevertheless, the removal of mummied fruit from orchards is good practice, for it does help out our spray program by reducing infection sources.

In conclusion, I would like to stress one thing: If a disease has been serious in previous years, it can be serious again if control measures are relaxed. In other words—having downed a disease, keep it down.

# RECENT MATURITY STUDIES OF GRIMES AND JONATHAN APPLES IN MARYLAND

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(Abstract)

During the past four years the horticultural department of the Maryland Experiment Station has been studying various maturity indices in relation to the proper time for harvesting Grimes and Jonathan apples in order to secure the best edible and keeping qualities. These studies have included work with the pressure tester, electrical maturity tester; index number, color development studies, and studies concerned with chemical changes in the fruit, particularly as regards loss of starch as maturity approaches. The possibilities which each of these hold as an accurate index of picking maturity may be briefly summarized as follows:

*Pressure Test.* Although still used, our studies have shown conclusively that the pressure test cannot be relied upon to furnish an accurate index of the proper stage of ripeness for picking. The reading will vary from year to year with the same variety, presumably due to climatic or enviornmental factors. Furthermore, it has not proved sufficiently "sensitive" to measure small changes as the critical picking stage approaches. During this period, changes in average pressure test readings of less than one pound per week with Grimes and Jonathan obviously makes its use unreliable as an index for picking maturity, and makes it of questionable value as an adjunct to other possible methods. Value of a pressure test is largely in predicting keeping quality.

*Electrical Maturity Tester.* This instrument, because of its apparent value as an index of pear maturity in the west, has been used for the past two years with Grimes and Jonathan under Maryland conditions. With the Jonathan no consistent change in the readings developed during a harvest period which began at least two weeks before commercial harvest and extended beyond this point. With Grimes a definite downward trend in the readings was obtained but no definite "break" occurred which could be attributed to change in the physiological condition of the fruit. In the earlier stages of the work considerable variation in readings occurred, which has since been correlated with changes in the temperature of the fruit.

*Index Number.* The so-called "index number" is derived from a mathematical computation which has as its basis the acidity of the fruit. It was devised by South Africa workers and has shown some promise as a guide to export maturity for certain of their varieties, including Jonathan. In our studies with Grimes and Jonathan, results very similar to those obtained by these workers have been secured, but the changes have not been sufficiently rapid as maturity approaches to

make it "sensitive" enough to be of value as an accurate index. It holds very little promise for use in Maryland.

*Color Development Studies.* Ground color studies with Grimes indicated conclusively that this is of very little value in determining picking maturity. Grimes from trees receiving good cultural care and fertilizer, and therefore in a fairly vigorous condition, change in ground color at too slow a rate during the critical period of maturity to be measurable by color charts under Maryland conditions. It is not uncommon for the fruit to drop without perceptible changes occurring in ground color development.

Red color changes in the Jonathan variety, however, were much more closely associated with the picking maturity of the fruit. These studies indicate that when at least 30 per cent of the surface of the average fruit on the tree is covered with red color before picking, good edible and keeping quailties subsequently develop, whereas fruit picked before it is at least 30 per cent covered with red color failed to develop good, edible quality in storage.

*Carbohydrate Changes Particularly Starch.* During the course of these investigations various carbohydrate changes have been followed as the fruit matured with the hope that certain changes might be both sufficiently rapid and consistent to offer a reliable index to the physiological maturity of the fruit. Changes in simple sugars, sucrose, total sugars, and starch have been included. Of these, starch loss as an index shows considerable promise with the Jonathan variety. The decrease is rapid, falling from better than 6 per cent to less than one per cent in the three weeks before harvest. Fruit harvested after the starch has decreased to less than one per cent has consistently developed fine, edible, and keeping quality, whereas fruit harvested and placed in storage before this point has been reached has failed to develop these desirable qualities. Fortunately a cheap and practical qualitative test exists for the determination of approximate starch content and can be used in the field by either the grower or inspector. Studies made during the past year based upon such "field" tests have shown this method to be feasible and reliable, and to quite accurately forecast the storage qualities which will develop. Further work to establish and develop this field test still further is planned for the coming year, however, it is believed to hold considerable promise, which together with red color development will give a more accurate index of picking maturity for Jonathan than any method yet devised.

In the case of Grimes, there is also a decerase in starch prior to harvest but it is not so great (at least 3% starch, dry wt. retained at time of commercial harvest) nor so rapid as with Jonathan and thus does not furnish as sensitive an index. However, in these studies it has been found that Grimes will develop good, edible quality over a much wider picking range than the Jonathan. The question of the proper picking maturity with Grimes, therefore, needs to be more closely correlated with the development of such fruit characteristics as will forecast its

ability to remain in storage without shriveling or developing physiological troubles. Further work is contemplated with this end in view.

In concluson it may be said that the observations (flesh firmness, ease of separation of fruit from spur, color, etc.) which have largely guided and composed the personal judgment of the grower in the past are still valuable aids in measuring the degree of maturity, and should not be entirely disregarded, particularly if the result of honest observation and unbiased judgment.

Committee Appintments

President Bryan appointed the following Committees:
Nominating—Andrew Hanson, Joseph G. Harrison, E. D. McCain.
Resolutions—Fulton W. Allen, A. L. Towson, William W. Moore.
Auditing—A. H. Nofsinger, Frank Hanson, Lloyd Balderston.

## DORMANT SPRAYS

W. S. HOUGH, Entomologist
Winchester Research Laboratory of the Virginia
Experiment Station
Winchester, Virginia

A dormant spray for apple orchards is unique in that a single application of a suitable combination of insecticides will give adequate control of several orchard pests for the entire season. For this reason the cost of controlling aphids and scale insects is not especially high compared to the cost of repeated applications required to keep the apples free from insects and diseases through the growing season.

At the present time San Jose scale is giving less concern than it has for many years. On the other hand, the white scurfy scale is rather common in many orchards in Virginia and east of the Blue Ridge the cherry scale is frequently more abundant than the San Jose scale. The cherry scale is a close relative of the San Jose scale and looks very much like it, but growers can usually distinguish cherry scale from San Jose scale by the fact that the San Jose scale causes a conspicuous red ring or spot on the apple immediately surrounding the scale, while no such red spot shows about the cherry scale or at most the red ring is comparatively inconspicuous.

It is our hope in this discussion to summarize the practical points derived from our experimental efforts and experiences with dormant sprays extending through the past ten years.

The trunks of apple trees and also the larger limbs on which loose bark occurs should be scraped to remove the loose bark wherever the infestation of San Jose scale or cherry scale is causing some concern. A thorough application of an effective spray will not penetrate or creep beneath the bark and often the only surviving scales will be found hidden under such protection. For a complete clean-up of these scales it is essential to remove the loose bark before spraying. Removal of the loose bark and cleaning the egg-masses out of cracks, knot holes and crevices

is also essential prior to applying a dormant spray against the mealy bug which has occurred on the apple trees in an increasing number of orchards. The scrapings containing mealy-bug eggs should be saved and burned.

*Fall spraying vs. spring spraying.* According to our experience fall spraying is about as effective as spring spraying for control of San Jose, cherry and scurfy scales. For control of aphids in the egg stage it has been necessary to use the materials at greater strength in fall sprays than is required for applications made in March.

*Viscosity of oil.* The "flowability" of an oil appears to be important only as it is an index to volatility or rate of drying. In case of a mild to moderate infestation of San Jose scale or cherry scale there does not appear to be any important difference in our results from using an oil ranging in viscosity from 110 to 135 seconds (Saybolt) compared to a heavier oil. On the other hand, a light oil of 85 seconds viscosity has rather consistently failed to give adequate control of these scales under our orchard conditions.

*Lime sulfur vs. oil for San Jose and cherry scale.* Lime sulfur at 12 gallons in 100 gallons of spray does not show as high percentage of kill as obtained from an oil spray of 2 or 3 per cent strength. But there is evidence that the surviving scales do not multiply normally through the summer and for this reason the ultimate control from lime sulfur is better than appears one month after the sprays are applied in the spring. The addition of 2 gallons of lime sulfur to dormant oil sprays appeared in some tests to increase slightly the effectiveness of the oil against San Jose and cherry scales.

*Sprays for scurfy scale.* The scurfy scale overwinters in the egg stage beneath the white scales which are so conspicuous on the trunk and larger limbs of an apple tree. An effective ovicide is required for controlling this stage of the insect. Petroleum oil at 4 per cent strength has been only fairly effective, because some of the emulsions used failed to deposit sufficient oil uniformly over the surface of the bark. When the trunks and branches appeared uniformly "oily" after the spray had dried, control with 4 per cent petroleum oil was fairly satisfactory, otherwise control was not adequate.

A mixture of 3 per cent petroleum oil and 2.5 per cent tar oil gave excellent control. Two per cent petroleum oil containing 9 or 10 ounces of dinitro-o-cyclohexylphenol gave satisfactory control. Likewise mixtures of 2 and 3 per cent petroleum oil and .4 per cent lauryl rhodanate gave good control; but lauryl rhodanate should not be used by growers until we learn more concerning its possible effects on fruit buds. Lime sulfur at 12 gallons in 100 gallons did not control scurfy scale.

The first brood of young crawlers of the scurfy scale hatch from the over-wintering eggs early in May or about the time the apple trees near the end of their blossoming period. They crawl over the bark for a short time then settle down and begin to form a scale of their own. In mid-summer there is a second brood of crawlers.

Excellent control of the scurfy scale was obtained in a heavily infested orchard by destroying the crawlers and young scales with applications of 2 quarts of Orthol-K oil emulsion and 4 pounds of nicotine bentonite (Black Leaf-155) per 100 gallons. The oil-nicotine combination was applied primarily for control of the codling moth on June 9, 19, 28, July 16, 24, August 3 and 13.

*Ovicides for aphid eggs.* During the past 10 years we have been interested in the control of apple aphids by the use of dormant sprays applied as ovicides or egg-killers. Various materials have been used but only four have given effective results. All were used in combination with a dormant oil. The effective ovicides listed in order of the time of our testing are as follows:

Dinitro-o-cresol (and its sodium salt)
Tar distillates (creosote oil and water gas tar oil)
Dinitro-o-cyclohexylphenol
Lauryl rhodanate

The first named compound although effective, as indicated by the initial work in England and then by two seasons of our own tests, was replaced by the tar distillate sprays while it was still in the experimental stage. The last named compound has been used only one season under our orchard conditions and, although it appears to be effective, it cannot be recommended until further tests are made. This leaves two effective dormant sprays that are now available to Virginia growers for controlling apple aphids in the egg stage. Since the tar distillates or "tar oils" have been widely used in this state for several years, I need make no further mention of them, except to say that our results indicate that an application of 2 per cent tar oil made in late November or early December does not give consistently effective control, while the same strength applied in March has given excellent results. Tar oils at 2½ per cent strength have given excellent control whether applied in the fall or spring.

The most recently available dormant spray for aphis control consists of petroleum oil containing dinitro-o-cyclohexylphenol (Dowspray Dormant). Our results of the past two seasons with this material show that it kills aphis eggs and eggs of the scurfy scale and at the same time appears to increase slightly the effectiveness of oil against San Jose scale and cherry scale. There is no burning effect on the hands and face following the use of oil sprays containing dinitro-o-cyclohexylphenol. This material like tar oil, must be used in the dormant season and will cause serious injury to the buds if used in the delayed dormant. Fall applications were as effective as applications made in March, provided the dinitro-o-cyclohexylphenol content was not reduced much below 10 ounces per 100 gallons of diluted spray. In March we obtained excellent control of aphids with sprays containing about 7.4 ounces of dinitro-o-cyclohexylphenol per 100 gallons.

*Oil injury.* There is no evidence to indicate that continued use of 3 per cent petroleum oil alone or in combination with 2½ per cent tar oil

causes any serious injury to apple trees. On the other hand, fruit spurs, small twigs and buds have been killed by the use of tar oil when the green first appears in the buds. Petroleum oil sprays that "layer out" in the tank, so that a few trees receive nearly all of the oil as the spray tank is emptied, have killed buds and small twigs. Last spring serious injury on large, vigorous apple trees followed two oil sprays. The first application in early March consisted of 3 per cent petroleum oil and 2½ per cent tar oil. The second application consisted of 3 per cent petroleum oil in late March and early April. Nearly all of the fruit buds were killed and also many leaf buds. Foliation was delayed and the trees grew abnormally small leaves through May and June.

## WHAT APPALACHIAN APPLES IS DOING

CARROLL R. MILLER, Secretary-Manager, Appalachian Apples, Inc., Martinsburg, W. Va.

Mr. President and Guests:

The great American stomach holds just about one ton of food per year. In years of prosperity and in depression, the amount of food consumed runs about the same, 2,000 pounds yearly, according to the best statistics. The money-value of this ton of food varies from year to year, as prices are up or down; and with prosperity and depression, as the public selects more expensive or the cheaper foods. But the amount remains always about the same, in tonnage;—about one ton a year.

That is a vital point for apple growers. For the producers of other foods and fruits are waging a clever, relentless battle for a larger and larger share of this American Stomach. Millions are being spent in advertising and grocer service work to win more customers to oranges, grapefruit, pineapples, bananas, potatoes, lettuce, meats, canned goods of many kinds. Run over the recent magazine and newspaper pages you have seen:—Armours, Swifts, Campbell Soups, Heinz, Kellogg, and so on and so on, almost without end. All these people are fighting for a share of the American Stomach.

They had succeeded, two years ago, in cutting consumption of apples by 24 per cent, in ten years. The King of Fruit's segment of the great American stomach was one-fourth smaller than in 1920. The forces that are fighting so actively are winning their fight. The housewife, told so often and so attractively that "such-and-such" things are healthful and delicious and economical and handy, is becoming convinced.

So . . . Apples must fight for their sector, of this one-ton American Stomach. It is becoming clearer to us as we work that any food product in today's competition which does not tell the housewife often and effectively of its own merits is doomed to extinction.

Apples are fighting . . . to a limited extent. Over the nation there are eight apple advertising associations; three in the northwest; three in the Midwest; two in the East, including your own association, Appalachian Apples. The eight "regionals" have about one-half million dollars

to spend, all together, in fighting for our share of the one-ton American Stomach. Citrus, about half as large in tonnage as apples, has 2½ millions for this. To be on a par with citrus in this work, apples should have five million dollars for promotional work, instead of a half-million.

The methods used by all these regionals are in general the same:—three major channels,—direct advertising, grocer service work, and publicity. A more detailed outline of our own work, in Appalachian Apples, will give you an idea of them all. The Washington State Apple Advertising Commission is the giant among us, with about $225,000 to spend, with payment guaranteed by tax-law. Our own association is next in size, according to budgets at least. Our sign-up of about 7,200,000 bushels at one cent per bushel, Utility and Better grades, from 693 growers of the four states, gave us a prospective working budget this season of $72,000. To date we have spent or obligated ourselves to approximately $52,000. A total of $34,000 has been paid in so far.

You have probably seen some of our display materials in Baltimore and Washington stores. We placed our "store sets" of apple display materials in 2,725 groceries in Baltimore; in 2,125 stores in Washington; 2,835 in Pittsburgh stores for instance.

In all, we have placed more than 35,000 "store sets"; and placed them carefully; only in stores that asked them and in which we were reasonably assured of good usage. Most stores using the materials also agreed to stage special displays of apples during the "campaign" conducted by Appalachian Apples in that city; while the Chains and Organized Grocers generally aided tremendously by featuring apples in their own advertising in newspapers, hand bills and such.

Here are some definite results of this work:—The American Stores, a chain of 2,450 stores in Philadelphia, sold 6,280 bushels of apples during the week of our Philadelphia campaign, Dec. 9-16, against 2,570 bushels the same week of the preceding year. We have not yet begun to check up on the results of the season's work. It is too early. But we are beginning to receive many reports such as this. We will pass the full reports along later, after the work is done and we have checked up.

We have carried newspaper advertising in 28 dailies of 14 cities. We have gotten publicity (recipes, feature articles on apples or apple cookery, apple photographs and such) in 3,520 newspapers with a total circulation of a few thousand less than 37 million copies. We have taken part in apple events; festivals and shows; in food fairs; have done a little promotion work for the "Big Apple" dance craze; have carried four regional radio programs (Atlanta, Washington, Philadelphia and New York); have done many other things of this nature. We have issued 42,000 very attractive "Appalachian Apple Recipe Books". We have fairly well covered the Central East and South with the promotional work and the advertising. Now we are slipping up into New England:—working Boston, New Haven, and New York City. We place heavy unloads of apples in these areas, as well as in the Central East and South.

We consider our first job to be with the grocer. This is our main line

of work:—getting him to know apples better; to be more friendly toward them; to understand the profit in proper handling of good apples; to know how to build displays of applies; to know how to buy them, and to pass along the right varieties to his customers. All these things the grocer does not know, as a rule. The apple is just one among some 2,000 items he handles. It is the growers' job to see that he does know about apples. He is our sales representative to the Public. Now a sales representative who does not know anything about what he is trying to sell is a poor representative. We can't expect much from that kind of representation. The other foods and fruits are teaching the grocers; have been for years. We must, too.

We must make friends with the grocer, instead of quarreling with him. When we get to know him, we find him just about as human as we growers are; just about as good; just about as bad; probably a little better business man, since the average life of a grocery store is only four years, nationally; and he has to be pretty keen to survive in that competition.

We must wish him a good profit on the apples he handles. No man, grocer or grower, is going to work hard on something that promises him little or no profit, or a probable loss. You spend little time on selling your culls, for there is no profit in them. You spend your time and thought on selling your good packaged fruit, for there is where your profit-chance lies. The grocer does the same. If apples, or anything else, are so low in price that there is little or no profit in them, the grocer simply shoves them to the back of his store; orders only enough to supply those customers who actually demand apples. But give him a nice profit-chance on apples and he will put them out in attractive displays in the front of the store and will "push" them to his customers. That is the rule in the grocery world. With continued education, it will work among grocers.

So . . . we must wish the grocer a good price for his apples . . . a good profit margin; instead of crabbing at him for marking apples "so high that the public can't afford to buy them". For a good apple market, give me high prices, every time. They mean a good profit-chance to the grocer, and he will push them.

The grocers have been mighty kind to us, incidentally, this season. Your own apple advertising association, Appalachian Apples, organized the other "regional" apple associations last Summer and secured from the Organized Grocers, (The Chains and the "Voluntaries",) the National Apple A Day Campaign. Through this, more than 50,000 of the nation's largest-volume groceries pitched in to "push" apples this season, through five week-long, nation-wide drives, backed by continuous effort in between the drive periods.

You may have noticed the splendid displays of apples which The Chain and other groceries gave apples, this Fall. You may have noted the exceptional amount of space given to apples in their advertising. All this was only a part of the National Apple A Day Campaign. It has pushed

into the consumers' hands many, many hundreds of thousands of apples which would never have reached the consumer except for these special, continuous, apple "pushes". We owe The Chains, and the Voluntaries, and the organized independents, a real debt of gratitude.

You are wanting to know about actual results of this apple promotion work:—the returns you have received, and will receive, from the one cent per bushel invested in this. It is too early to check, as yet. The apple selling season is still young. But here are some broad, comprehensive indications of very real results already.

1. Last season to December 1st, a total of 84 million bushels of apples had gone into consumption. This season to December 1st, the total was 162 million bushels; about double last year's, according to U. S. reports. From all over the country we are receiving reports that apple acceptance (consumption) has been heavier this year than within memory. The advertising and the grocer-service work and the publicity have had a very large hand in this.

2. This seasons' apple crop was 20 per cent (34 million bushels) larger than the "big" crop of 1935. Now, piling 34 million bushels on top of an already "big" crop would normally mean much lower prices for the present season's crop. Yet prices have remained almost exactly the same, and for a large part of the season just a trifle stronger, than in 1935; in spite of the "recession" which is now actively cutting food purchases. Certainly, some new, powerful factor has been at work this season; and that factor, we know, is the advertising and promotional work of the several regional associations, including Appalachian Apples.

3. The public, and the grocers, are learning about Apples; the things that this younger generation has almost forgotten about The King of Fruits; the health values and food values of apples; the best varieties to use and the best ways to use them.

The apple promotional work this season has not been able to do as much as it should have . We admit that frankly. You are expecting us to move a 10-ton loaded truck with a Chevrolet auto engine. The car engine will move the truck all right on the level, or up the smaller hills. But when you come to a very long and very steep and very rough hill, the present motor is not enough. This apple-selling season is long and steep and rough. We must provide for such exceptional years in the future, by building up adequate reserves to throw into this work when crops like this one come along.

But we do know that we have sustained the apple market very noticeably. We ask you in all seriousness:—What would the market-level have been without the advertising, the publicity, the grocer-service and the aid of the Organized Grocers?

# A NATIONAL SURVEY OF CULTURAL AND FERTILIZER PRACTICES FOR APPLES AND PEACHES AND ITS APPLICATION TO MARYLAND CONDITIONS

A. L. SCHRADER, Head, Department of Horticulture,
University of Maryland, College Park, Md.

This survey was rendered possible through the cooperation of horticulturists in thirty-five States. Twenty-two fruits and nuts were reported on, but only the material on peaches and apples are presented here. The conclusions drawn and statements on the results are those of the author, based on material furnished by the cooperators in 1936-37.

The following pages give a summary of the practices, concluding with recommendations under Maryland conditions.

## Apples

*States Reporting* (32): *Alabama, Arkansas, California, Connecticut, Delaware, Idaho, Illinois, Indiana, Kansas, Kentucky, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, New York, North Carolina, Ohio, Oklahoma, Oregon, South Carolina, Tennessee, Utah, Vermont, Washington, West Virginia, Wisconsin and Wyoming.*

*Soil Types.* The soils planted to apples included stoney loam, gravelly loam, shaley loam, sandy loam, silt loam, clay loam, loess, and heavy clay. Light, sandy soils were seldom mentioned. Heavy clays were more frequently used than light soils, but the loamy types with silt, clay, or sand were prevailing.

*Planting Distances*: The most common distance of planting was not similar among states but varied between 20′ x 25′ and 40′ x 40′. Western states reported the closest distances (six states averaged 24′ to 28′ or 65 trees per acre). Southern states reported somewhat greater disances (six states average 29′ x 31′ or 48 trees per acre), whereas ten northern, central and eastern states averaged 35′ x 36′ or 35 trees per acre. Extreme distances included 18′ x 18′, 20′ x 20′, 45′ x 45′ and 50′ x 50′.

*Planting Practices.* Size of hole dug for a tree at planting varied from 1′ to 3′ in depth and 1′ to 1½′ in width with no geographical relationship. Tamping of the soil around the roots was reported almost as a universal practice, usually done with the feet. Mounding of the soil after planting was reported by 10 states, but was used by 5 per cent to 100 per cent of the growers in these several states. Dynamiting of the soil before planting is infrequently used, four states reporting 1 to 2 per cent of cases. Likewise, subsoiling is infrequent, three states reporting some subsoiling, reaching 20 per cent in Alabama. Puddling of the soil on roots occurs as 5 per cent to 50 per cent in 9 states reaching a maximum of 50 per cent in Arkansas. Use of irrigation at planting is reported as 100 per cent or nearly so in Idaho, Montana, and Oregon, and in slight degree in five other states from west to east. Mulch is

applied in 15 states by 2 to 90 per cent of the growers, mostly 5 to 10 per cent, in states mostly in south, central and eastern sections. Shading of trees was not practiced.

Fertilizer use at planting time, reported by 14 states, varied from 5 per cent to 100 per cent, (mostly 50 or above), in use by growers, mostly applied near the tree.

Table I.—*Apple Planting Practices*

| Item | Tamping | Mounding | Dynamite | Sub-Soiling | Irrigation | Puddling | Mulching | Fertilizer |
|---|---|---|---|---|---|---|---|---|
| States reporting | 28 | 10 | 4 | 4 | 9 | 9 | 14 | 14 |
| Average Percent of Growers Using (Not weighted average) | 90 | 45 | 1 | 5 | 50 | 15 | 20 | 50 |

*Cultural Systems.* Sod culture was given as a common system in 20 states and sod mulch in 15 states. Sod rotation was reported commonly in use in 9 states, Connecticut, Idaho, Indiana, Kansas, Massachusetts, Maine, Maryland, Ohio, and West Virginia. Strip cultivation appeared only in Delaware, Maryland, West Virginia, and Wisconsin. Clean cultivation with cover crop was most general as a common system, reported by 24 states, and is *not* reported as a common system, in Idaho, Massachusetts, Minnesota, Mississippi, New Hampshire, West Virginia, and Vermont.

Intercrop planting between young trees varied from 5 to 100 per cent of the growers in each of 26 states, with at least 25 per cent of the growers using intercrops in each of 14 states. The following states reported this practice for at least 75 per cent of growers: Arkansas, Kentucky, Missouri, Oregon, Tennessee, and Utah.

Nineteen states reported the use of extra mulch, usually straw, in 5 to 50 per cent of the orchards, mostly 5 to 10 per cent of the orchards in any state. Indiana and New Hampshire gave as high as 50 per cent of growers using this practice. Other materials used were rough hay, spoiled alfalfa hay, marsh hay, and manure.

*Fertilizer Use for Annual Cover Crops or Sods.* Nearly all states showing the use of sod or sod mulch culture reported application of fertilizer to promote growth of such covers. Fertilizers were used thus by 2 to 90 per cent of the growers in any state, mostly 5 to 25 per cent. Some states indicating only cultivation and annual cover cropping system reported no use of fertilizer for the crop: Arkansas, California, and Montana.

Materials and amounts of fertilizers for orchard covers (sod and annual) varied among states. Superphosphate at rates of 150 pounds to 500 pounds depending on the state, was applied in Alabama, Connecti-

cut, Kansas, Kentucky, Missouri, Oklahoma, South Carolina, Wisconsin, and Utah. Mixed fertilizers appeared in Massachusetts 4-8-4 or 5-8-7 at rate of 500 pounds, in New Hampshire 5-8-7 at the rate of 300 pounds, in Ohio 0-14-6 at the rate of 200 pounds, in Vermont 8-16-16 at the rate of 500 pounds, in Maine 4-8-7 at the rate of 350 pounds, and in Delaware 3-8-5 at the rate of 100 to 200 pounds per acre. A few states, including Idaho, Maine, Oregon, Vermont, and Washington, reported the use of nitrogen materials.

*Cover Crops and Sod Crops Grown in Apple Orchards.* The following 21 crops are used commonly as annual covers in the several states listed. Any state name in italic type indicates that the crop is most commonly grown. *Austrian peas* (Mississippi, South Carolina); *Barley* (Kentucky, Massachusetts); *Buckwheat* (Connectciut, *Maine, Massachusetts, New Hampshire,* Ohio, Vermont); *Bur clover* (California); *Cowpeas* (Delaware, Illinois, Indiana, Kansas, Kentucky, Maryland, *North Carolina,* Oklahoma, South Carolina); *Crimson clover* (Illinois, New Hampshire); *Lespedeza* (Delaware); *Lupine* (California); *Millet* (Michigan, New Hampshire, New York, Ohio); *Mustard* (California); *Oats* (Arkansas, Kentucky, Michigan, *Minnesota*); *Red-Root* (Utah); *Rye* (*Arkansas,* Connecticut, Delaware, Illinois, *Indiana,* Kansas, Kentucky, *Maryland,* Massachusetts, Michigan, Minnesota, *New York, Ohio,* Oklahoma, Tennessee, West Virginia); *Sorghum* (Arkansas); *Soybeans* (Delaware, Indiana, *Kentucky,* Maryland, New York, *North Carolina,* Ohio, West Virginia); *Sudan grass* (Ohio), *Sweet clover* (California, Idaho, Illinois, Maryland, *Oregon,* Wisconsin); *Vetch* (Alabama, Arkansas, California, Delaware, *Kansas, Maryland,* Massachusetts, Mississippi, North Carolina, Ohio, *Oklahoma,* Oregon, South Carolina, Utah); *Weeds* (Arkansas, *Massachusetts,* Maryland, Tennessee, Utah, Wisconsin); and *Wheat* (Indiana, Oklahoma).

Rye, vetch, cowpeas, and soybeans appeared most frequently. Buckwheat is mentioned only in New England states and Ohio.

The following crops and mixtures were given as common sod crops in apple orchards by the several states. Any state name in italic type indicates that the crop was most commonly grown. *Alfalfa* (*Idaho, Indiana,* Maryland, Montana, *New York,* Utah, Vermont, Washington, West Virginia); *Bermuda grass* (Alabama, South Carolina); *Blue grass* (Idaho, Illinois, *Indiana,* Kansas, *Maine, Missouri, New Hampshire, Ohio,* Wisconsin); *Clovers* (Connecticut, Indiana, Maine, New Hampshire, Ohio, *Vermont,* Wisconsin); *Lespedeza* (Delaware, Indiana, Kentucky, Maryland, *North Carolina,* Tennessee); *Mixed grasses* (Alabama, Connecticut, Indiana, Minnesota, Mississippi, Missouri, *North Carolina,* Vermont, *Wisconsin*); *Orchard grass* (Illinois, Minnesota, *New York,* Ohio); *Red Clover* (*Minnesota,* Montana), *Red-Top* (Minnesota); *Sweet clover* (Delaware, Idaho, Indiana, Kentucky, Maryland, Montana, New York, North Carolina, *Utah,* Washington, West Virginia); *Timothy* (*Maine,* Ohio); *Weeds* (Idaho, Illinois, *Utah*); and *Witch-grass* (New Hampshire).

Blue grass, sweet clover, and alfalfa are given by states of all major apple sections as sod crops apparently most common.

*Fertilizer Application for Trees.* Practically all states reported fertilizer applications for direct use of the trees whether the orchards were under sod culture or cultivation. The percentage of growers using fertilizer ranged from 1 to 100 per cent in the several states, mostly 60 to 80 per cent for sod orchards and 50 to 75 per cent for cultivated orchards.

(Time)—Twenty-one states reported early spring as the time of application. Eleven states (Illinois, Missouri, New Hampshire, New York, North Carolina, Ohio, Oregon, West Virginia, Wisconsin, Delaware, and Maryland) gave both fall and early spring as the time.

(Method)—Application by hand (no machine application for tree use) was given as the method by all states. All fertilizer was applied to the surface of the soil and only six states (Alabama, Mississippi, Montana, Oregon, South Carolina, and Utah) reported that the fertilizer was worked in after application.

(Area)—The area of soil usually covered by the application included the spread of the branches or just beyond for both young and bearing trees, except that eight states (Arkansas, California, Connecticut, Delaware, Idaho, Mississippi, South Carolina, and Washington) gave a practice of covering the full area of ground.

(Materials)—The fertilizer materials used are listed as folows: Nitrate of soda, sulfate of ammonia, cyanamid, calcium nitrate, canitro, nitrate of potash, ammo-phos, cottonseed meal, stable manure, sheep manure, and complete fertilizers.

Nitrate of soda is in common usage in 28 states and was reported a leading material in 8 of these states. Four states (California, Utah, Wisconsin, and Wyoming) did not list nitrate of soda.

The common use of sulfate of ammonia also is reported in 28 states, (not listed for Mississippi, New Hampshire, North Carolina, and Wyoming) and is given as a leading material in 9 of these states.

Cyanamid as a material in common usage was listed in 21 states, and reported as a leading material in 6 of these states. For California, Kansas, Michigan, Minnesota, Mississippi, Montana, Oklahoma, Tennessee, Utah, Wisconsin, and Wyoming, cyanamid was not reported as commonly used.

Calcium nitrate was listed for 3 states (California, Connecticut, and Washington) as in common usage. Some use of calnitro was given in Maine, New Hampshire, and Vermont.

Cottonseed meal was listed as in common usage in Mississippi, stable manure in California and Maine, sheep manure in Idaho, and poultry manure in Maine.

Some use of nitrate of potash is reported in Maine and Maryland.

The use of mixed fertilizers for applications to the trees was given by 20 states, not being reported by Arkansas, California, Indiana, Kansas, Kentucky, Maine, Minnesota, Missouri, New York, North Carolina, Okla-

homa, and Wyoming. The per cent of growers using mixed fertilizers varied form 1 to 70 per cent, mostly 1 to 5 per cent, among the several states. Alabama, South Carolina, and Delaware reported the largest percentage of growers. Analyses, reported by 14 states, included: 0-14-6 (Ohio), 3-8-5 (Delaware), 3-10-10 (Oregon), 3-10-20 (Washington), 4-8-4 (South Carolina and Mississippi), 4-8-7 (Maine), 5-8-7 (Massachusetts and Connecticut), 6-8-4 (Alabama), 6-10-4 (Montana), 7-8-5 (New Hampshire), 8-16-16 (Vermont), 10-6-4 (West Virginia), and 13-6-6 (Washington). In some instances, mention was made of larger amounts of mixed fertilizer per tree compared with use of nitrogen materials.

(Amounts Applied)—All apple producing states reported fertilizer applications to non-bearing and bearing trees, except in Kansas and Missouri with young trees.

The amounts per tree used for young non-bearing trees varied from ¼ to 4 pounds of 16 to 20 per cent nitrogen fertilizers. The variation in amount usually was due to tree age, rather than locality. Average limits of ¾ to 2 pounds per tree were computed for 12 states that gave limits of 0 to 4 pounds.

Six states gave the amount for the non-bearing tree as ¼ pound of a 16 to 20 per cent nitrogen fertilizer for each year of tree age. One state also reported the applications on this basis for bearing trees.

Table 2.—*Tabulation of Type of Experimental Work in Progress on Apples.*

| Experimental Work in Progress on Fertilizers for Apples. | Ark. | Calif. | Del. | Idaho | Ill. | Kan. | Ky. | Maine | Md. | Mass. | Mich. | Mont. | N. H. | N. Y. | Ohio | Tenn. | W. Va. | Wisc. | Wash. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Time of application | x | x | x | | x | | | | x | x | x | x | x | x | x | x | | x | x |
| Surface distribution | | x | | x | x | x | | | x | | | x | | x | x | x | | | x |
| Deep placement | | | x | x | x | | x | x | | | | x | x | | x | x | | x | |
| Amount per tree | x | x | x | | x | x | | | x | | | x | x | x | x | x | | x | x |
| Source of Potash (K) | | | | | | | | | x | | x | | x | x | x | | | | |
| Source of Nitrogen (N) | | x | | | x | | | | x | | | x | x | x | x | | x | | x |
| Source of Phosphorus (P) | | | | | | | | | | | | x | | x | | | | | |
| Relative value of N.P.K. | x | | x | x | | | x | x | | x | | x | x | | x | x | x | x | x |
| Deficiencies—other elements | | x | | | | | | | x | | | x | | | | | | | x |
| Root response | x | | | | | | | | x | | | x | | | | | | | |
| Physiology of intake and utilization | | | x | | x | | | | | | x | | | | | | x | x | |
| Effect on shipping, keeping and market quality | | x | x | | | x | | | x | | | x | x | | x | | | | x |
| Relation to other soil factors | | | | | | | | | | | | | | | | | | x | |
| Pot culture work | | | | | | | | | | | x | | | | x | | | x | x |

*Basis of Fertilizer Recommendations.* Twenty-four states reported that observed responses (usually in experiments) were used as a basis for recommendations. Eleven states also gave as a basis, observed deficiences; namely, (Arkansas, Illinois, Kansas, Massachusetts, Montana, New Hampshire, Wisconsin, Maine, Utah, Maryland, and Washington). Twenty-one states also listed the growers' experience as a guide to recommendations.

*Experimental Work in Progress.* The foregoing tabulation will serve to denote the several states doing experimental work along certain lines at the State Agricultural Experiment Stations.

## Peaches

*States Reporting* (25): Alabama, Arkansas, California, Connecticut, *Delaware, Illinois, Indiana, Kansas, Kentucky, Louisiana, Maryland, Massachusetts, Michigan, Mississippi, Missouri, New Hampshire, New York, North Carolina, Ohio, Oklahoma, South Carolina, Tennessee, Texas, West Virginia,* and *Utah.*

*Soil Types.* The soil types planted to peaches included sands, sandy loam, gravelly loam, shaley loam, stoney loam, silt loam, clay loam, clays, and loess. Sandy loam, silt loam and clay loam predominated in this survey with most emphasis on the lighter soils. Clay or silt soils were seldom mentioned.

*Planting Distances.* The common planting distance varied among states from a distance of 17′ x 17′ to 25′ x 25′ with 20′ x 20′ as the distance most frequently used. Extreme distances included 15′ x 15′, 35′ x 35′, and 24′ x 30′. Slightly greater distances were reported for northern and central states compared with southern or western states. More uniformity in planting distances apparently occurred with peaches than with apples among states.

*Planting Practices.* Size of hole dug for trees varied in depth from 9″ (Arkansas) to 2½ feet (Texas) with no particuar relation to geographical section. Likewise, diameter of the hole varied from 7″ (Arkansas) to 3 feet (Oklahoma). The usual size of hole reported was 1½ feet in depth and 2 feet in width. Tamping of the soil at planting was reported as almost a universal practice among the states. Mounding of the soil around the tree after planting was reported only by seven states and usually was most commonly used by southern states. Dynamiting of soil before planting was not reported except in Kentucky where only 1 per cent of growers used dynamite. Subsoiling is used in Texas by an estimated 90 per cent of the growers and in Louisiana by 50 per cent, but was not reported for other states except for two to five per cent in California and West Virginia. Irrigation is in use at planting in Utah by all growers and in Illinois by possbly 2 per cent of the growers. Puddling of the soil is a practice of 50 per cent of the growers in Arkansas and 10 per cent in Massachusetts, but was not reported by other states except Oklahoma. Mulching newly planted trees was reported by only 4 states (Illinois, Massachusetts, West Virginia and Utah) and

not exceeding 10 per cent of growers in any of these states. Shading was not practiced in any state.

Fertilizer use at planting near the tree was given by 12 states in use by 5 to 100 per cent of the growers, usually 25 to 50 per cent.

Table 3.—*Peach Planting Practices.*

| Item | Tamping | Mounding | Dynamite | Subsoiling | Irrigation | Puddling | Mulching | Fertilizer |
|---|---|---|---|---|---|---|---|---|
| States Reporting | 24 | 7 | 1 | 5 | 3 | 3 | 4 | 12 |
| Average Per cent of Growers Using (not weighted average) | 95 | 60 | 1 | 30 | 70 | 20 | 10 | 40 |

*Cultural Systems.* Only three states. Kentucky, Texas, and Utah reported any use of sod culture for peaches, also reporting clean cultivation plus cover crop as the common system which is in use in all other states. Strip cultivation along the tree rows also was indicated in use in 6 states (Alabama, Illinois, Indiana, Kentucky, West Virginia, and Maryland). Use of mulch was infrequent, reported as 2 per cent of growers in Kentucky and 5 per cent in Delaware, and some use in Utah, of manure mulch. Nineteen states reported the planting of inter-crops in young, non-bearing orchards by 1 to 75 per cent of growers, usually 40 to 50 per cent.

*Fertilizer Use for Annual Cover Crops.* Only fourteen of the 25 states reported the use of fertilizer to promote the growth of cover crops and the practice was in use by 1 to 90 per cent of the growers, usually 25 to 50 per cent in any given state. In the Carolinas, the majority of growers used fertilizers. Materials and amounts varied among the several states, but included superphosphate 200-400 pounds per acre, reported by six states, sodium nitrate or ammonium sulphate 150-300 pounds per acre, and several mixed fertilizers at rates of 100 to 500 pounds per acre. The mixed analyses reported were 4-8-4, 5-8-7, 5-8-12, and 0-14-6.

*Cover Crops Grown in Peach Orchards.* The following 16 crops were used commonly as cover crops in the 25 states which reported peaches as commercially grown. The use of each of the crops is listed herewith, printing in italics the state name to indicate that the crop is most commonly grown: *Austrian peas* (Alabama, Louisiana, Mississippi, North Carolina, *South Carolina,* Texas); *Barley* (Kentucky); *Buckwheat* (*Connecticut, Massachusetts, New Hampshire,* Ohio); *Cowpeas* (Alabama, *Arkansas,* Delaware, Illinois, Indiana, Maryland, Oklahoma, South Carolina); *Crimson Clover* (*Delaware,* New Hampshire); *Crotalaria* (South Carolina); *Lespedeza* (Delaware, Illinois, Missouri); *Millet* (Michigan, New Hampshire); *Mustard* (California); *Oats* (Michigan,

Texas); *Rye* (Arkansas, Connecticut, Delaware, *Indiana, Kentucky, Maryland,* Massachusetts, Michigan, New York, North Carolina, Ohio, *South Carolina, Texas, West Virginia*); *Soybeans* (*Delaware,* Illinois, *Indiana,* Kentucky, Maryland, *Missouri, Ohio,* Texas, West Virginia); *Sweet Clover* (California, Illinois, Maryland); *Vetch* (Alabama, Arkansas, California, Delaware, Kansas, Louisiana, Maryland, Massachusetts, *Mississippi,* Missouri, North Carolina, Ohio, *Oklahoma,* South Carolina, Texas, Utah); *Weeds* (Connecticut, Delaware, Illinois, *Massachusetts, New York,* Tennessee, Utah); *Wheat* (Indiana). Sod crops of lespedeza, sweet clover, alfalfa, weeds or grasses were reported by Kentucky, Mississippi, Texas and Utah.

Rye and vetch were reported most frequently, actually by 15 and 16 states respectively. Soybeans, cowpeas, and weeds were next in extent of usage, reported by 9, 8, and 7 states respectively.

*Fertilizer Application for Trees.* All of the 25 states show use of fertilizers applied directly for tree response. From 10 per cent to 100 per cent of the growers use fertilizer in this manner in any given state, usually 80 to 90 per cent of the growers for most states.

(Time of Application)—All states gave early spring as a time of application, but four states (Maryland, Delaware, Tennessee, and Ohio) also included fall as another time of application. A few states (Connecticut, North Carolina, Texas and Oklahoma) reported late spring application to supplement spring application, and two states (Missouri and Arkansas) gave only late spring.

(Method of Application)—All applications were made by hand, as surface applications, and only six states reported that the fertilizer was worked in after application, usually following the application of mixed fertilizers.

(Area of Application)—With young trees, most states reported the application under the spread of the branches, but with bearing trees, this method was not in use in all states; since in 8 states the application was broadcast over the full soil area of the orchard.

(Materials Applied)—The fertilizer materials included calcium nitrate, nitrate of soda, sulfate of ammonia, cyanamid, potash nitrate, calnitro and manure. Nitrate of soda is in use in all 25 states and is reported as a leading material in 8 of those states. Sulfate of ammonia was reported in common usage in 21 of the 25 states and as a leading material in 6 states. Cyanamid was commonly used in 10 states, appearing as a leading material in 2 states (Ohio and Indiana). Calcium nitrate was given only by California. New Hampshire reported some use of calnitro, and West Virginia and Connectciut likewise indicated some use of potash nitrate.

Sixteen states reported the use of mixed fertilizers for direct tree applications by 1 to 100 per cent of the growers, usually by 5 to 10 per cent of growers. States not reporting such use included Connecticut, Illinois, Indiana, Kentucky, Michigan, New York, Oklahoma, Tennessee, and Kansas. The greatest percentage of growers using mixed ferti-

lziers was reported in Arkansas, North Carolina, Texas, South Carolina, Delaware and Louisiana. Analyses reported in use included 6-8-4 (Alabama), 4-12-4 (Arkansas), 5-8-7 (Massachusettes), 4-8-4 (Mississippi), 7-8-5 (New Hampshire), 4-8-4 (North Carolina), 0-14-6 (Ohio), 4-8-4 and 6-9-3 (Texas), 10-6-4 (West Virginia), 5-8-12 (Delaware), and 4-8-4 (Louisiana).

(Amounts Applied)—On a per tree basis, amounts of nitrogen materials (16 to 20% N) varied from ¼ to 2 pounds annually for young trees and 1½ to 8 pounds annually to bearing trees. Larger amounts of mixed fertilizers were reported than of nitrogen carriers, usually twice the quantity per tree. Five states reported ¼ to ½ pound of nitrogen material per year of tree age, as the usual quantity, but other states preferred to state the usual limits of variation, or average quantity, for bearing and non-bearing trees.

*Basis of Fertilizer Recommendations.* Nineteen states reported the observed responses of trees as a basis for fertilizer recommendations. Seven states reported observed deficiencies which served in addition to observed responses. Growers experience also was used as a basis in 16 states.

*Experimental Work in Progress.* The following tabulation denotes the type of investigation in progress at the several State Agricultural Experiment Stations.

Table 4.—*Tabulation of Type of Experimental Work in Progress on Peaches.*

| Experimental Work in Progress on Fertilizers for Peaches | Ark. | Calif. | Del. | Ill. | Kan. | Ky. | La. | Md. | Mich. | Miss. | N. H. | N. C. | Tenn. | S. C. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Time of Application | x | x | x | x | | | | | x | x | | | x | |
| Surface Distribution | | x | | | x | | | | | | | | | |
| Deep Placement | | | | | | x | | | | | | | | |
| Amount Per Tree | x | x | | x | | | x | | | | x | | x | x |
| Source of Potash (K) | x | | | x | | | x | | x | | | | | |
| Source of Nitrogen (N) | x | x | x | x | x | | x | x | | x | | | | x |
| Source of Phosphorus (P) | x | | | | | | x | | | | | | | |
| Relative Value of N.P.K. | x | | x | x | | x | x | | | | | | x | x |
| Deficiencies—other elements | | x | | | | | | | | | | | | |
| Root Response | | | | | | | | | | | | | | |
| Physiology of Intake and Utilization | | x | | | | | | | | | | x | | |
| Effect on shipping, keeping and market quality | x | | | | | | | x | | | | | | |
| Relation to other soil factors | | x | | | | | | | | | | | | |
| Pot Culture Work | | | | | | | | | x | | | x | | |

## UNDER MARYLAND CONDITIONS

In common with best practices in other states, it is desirable in Maryland to give young trees the best of conditions for development by:

1. Proper planting with soil tamped carefully around roots.
2. Mulching of the young tree with straw or other material.
3. Application of fertilizer as the tree starts to grow, using a complete fertilizer in the early years.
4. Avoidance of too close planting of early cover crops (June seeding) or intercrops, such as corn, which compete with the June growth of the young tree. Six feet away from the tree is a good rule.
5. Proper planting distance for peaches and apples to permit root development of trees, and thus easier maintenance of growth of tree and fruit development in later years. Small sized fruit may often be due to crowding of trees on a given area of soil.

In established orchards in Maryland the better practices to maintain growth and fruitfulness should include the following:

1. Application of fertilizer to promote the growth of cover crops and sods. For non-legume sods and cover crops a 3-12-6 fertilizer is recommended, and for legume sods, a 0-14-6 is desirable. Apply fertilizer to sods in the fall, and just before seeding of the cover crop or sod. Lime also may be needed for the best growth of such crops. The development of good cover crop or sod increases the organic matter of the soil, controls erosion, conserves moisture on slopes by preventing excess run-off of rains, and carries soil nutrients deeper into the soil by root penetration. Good sod growth can be mowed to make a fair mulch. (See Table 5.)

Table 5.—*Effect of fertilizer applications on growth of grass sod in apple orchards*, 1936

(Experiment by A. F. Vierheller and A. Lee Schrader)

| Fertilizer Treatment* | Air Dry Weight, 1st Cutting, per acre | | |
|---|---|---|---|
| | Oak Ridge | May 23 | Seibel Orchard, June 3 |
| No Fertilizer | 845 | | 1145 |
| 100 lbs. Ammo-phos per acre | 1543 | 1482 | 1996 |
| 200 " " " " " | 2329 | 3328 | 2450 |
| 400 " " " " " | 3933 | 2329 | 3328 |
| 600 " " " " " | 3025 | 3309 | |
| 800 " " " " " | 2874 | 3781 | |
| Analysis of Ammo-phos | 16-20-0 | 11-40-0 | 11-40-0 |

* Ammo-phos was applied April 15 in the Oak Ridge Orchard and April 22 in the Seibel Orchard. Nitrate of soda for the tree was applied early in the spring.

It is readily apparent that ammo-phos application greatly increased the sod growth. Probably 400 pounds per acre of either analysis appears to be the optimum application.

2. Application of nitrogen fertilizer to the tree in the fall preferably, or part in fall and part in spring. On light soils, nitrate of soda should not be used in the fall because of excess leaching. Large amounts of sulfate of ammonia should not be used in the spring. Cyanamid and sulfate of ammonia are best applied in the fall.
3. Nitrogen applications in the spring or mixed fertilizers high in nitrogen will promote good sod growth. In an experiment with ammo-phos (16-20-0 and 11-40-0) in 1936, some large increases in sod growth were obtained, as shown in table 5. Plots of 1/100 acre in size were used.
4. Sow the cover crops which grow best under the local conditions of a given orchard. Rye and vetch mixture, sown September 1-15 has given good results in many soils in Maryland. Sudan grass is worthy of more attention and use as a summer cover.

## THE CODLING MOTH POPULATION IN MARYLAND, 1937

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Before commenting directly on the 1937 codling moth population, it seems pertinent to review the codling moth population for the past several years . The season of 1930 was most favorable for codling moth multiplication and consequently resulted in heavy moth injury to the fruit that year and also provided for a heavy carry-over of worms for 1931. This heavy carry-over of worms naturally resulted in a heavy injury to fruit in 1931 and this injury continued to be heavy during 1932 and 1933. With better spraying equipment and an unfavorable year for moth reproduction, the 1934 codling moth infestation was reduced and remained so during 1935 and 1936. During 1937, the latter part of July and the first part of August was dry and hot which resulted in a heavy build up of the second brood moths in many orchards. The *average percentage* of fruit injured by codling moth in a survey of most commercial orchards from 1930 to 1937 inclusive, is shown in the following table:

**Codling Moth Infestations**

| | Eastern Shore | Central Maryland | Western Maryland | Average |
|---|---|---|---|---|
| 1930 | 39.61 | | 13.4 | 26.50 |
| 1931 | 33.39 | 33.83 | 7.24 | 24.80 |
| 1932 | 39.37 | 13.2 | 5.24 | 19.20 |
| 1933 | 38.30 | 25.74 | 14.87 | 26.40 |
| 1934 | 20.87 | 5.52 | 14.60 | 13.30 |
| 1935 | 21.81 | 16.46 | 8.90 | 16.40 |
| 1936 | | 15.40 | 11.60 | 13.50 |
| 1937 | 30.38 | 12.82 | 14.86 | 19.30 |
| Averages | 31.96 | 17.56 | 11.33 | 19.82 |

After reviewing the above figures, it is evident that in many orchards progress in codling moth control has not been satisfactory. In many of the Maryland orchards, new spraying equipment and washing machines have been installed since 1930, and in these orchards the moth infestation has been held down to a minimum. However, the average moth infestation for the State remains too high. In many orchards, from 25 to 60% of the fruit showed either worms or stings in the 1937 survey. These growers cannot continue to produce fruit for worm food and stay in the apple business. It will be necessary for them to install washing machines and put on late sprays for the second brood moths or else improve upon their present methods by a more timely and thorough job of spraying for the first brood moths and by using sanitation methods such as scraping the loose bark from the trees and placing chemically treated bands around them before June 15th and also screening in picking boxes, baskets, etc., to prevent the moths emerging from them and escaping into the orchard.

If the new growth of foliage and fruit is kept constantly covered with poison during the activities of the first brood of codling moth and sanitation methods are practiced, the moth infestation in 1938 will be reduced. However, if there is no improvement in control practices over the practices carried out in some of the orchards in 1937, with the heavy carry-over of worms, many growers will only add more red ink to their already highly discolored ledgers.

## THE PROGRAM FOR JAPANESE BEETLE RETARDATION IN MARYLAND DURING 1938

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Mr. President, and Members of the Maryland Horticultural Society:

I am here today to discuss and obtain your reactions and comments on the Japanese beetle control program that Maryland has adopted for 1938. Before entering into a discussion of the retardation program I want to say something about the Japanese beetle as a pest.

The Japanese beetle is a comparatively new insect which is about to invade Maryland and threaten our agricultural prosperity. If I were to tell you just how destructive this insect is, and you had not seen this insect working, you might be inclined to say that I am trying to alarm you. The Japanese beetle is going to be one of the worst insects with which our farmers have ever had to deal. Also it is going to be one of the worst insects with which our city people have ever had to deal. It is capable of blighting parks, ornamental gardens and lawns. From the standpoint of defoliation of plants, its ravages may be compared with that of the Mexican bean beetle. The important difference in damage between the two insects is that the Mexican bean beetle feeds only on beans or a few plants closely related to beans, whereas the Japanese beetle feeds on over 200 different plants. A few of the more important agricultural crops attacked are: corn, soybeans, apple, peach, cherry,

plum, grape, beans, asparagus, raspberry and strawberry; such shade and ornamental trees as elm, linden, cherry, willow, poplar, pin oak, and Norway maple. Garden ornamentals such as rose, dahlia, hollyhock, canna, aster, marigold and zinnia are readily fed upon. Lawns, golf greens and pastures afford ideal breeding areas for the grubs and are frequently seriously damaged.

Control is expensive, and losses may be large. According to the late L. H. Worthley, of the U.S.D.A., annual expenditures for control in heavily infested areas on a few items are: City block, $62.80 per block; sweet corn, $2.00 per acre; peaches, $8.80 per acre; apples, $7.15 per acre; estates, $513.00 per estate; golf courses $618.00 per course; cemeteries $225.00 per unit. The average annual damage in heavily infested districts has been determined for the following: Field corn, $5.00 per acre; sweet corn $17.50 per acre; early apples $123.00 per acre; early peaches $154.00 per acre; general farms $1.76 per acre.

You may recognize the Japanese beetle as being a small beetle about the size of your little finger nail, with a metallic green head and neck, and coppery brown wing covers. If you will stand the beetle on its head and look at the abdomen, you will find it edged with twelve small white spots. The beetle makes its appearance about June 10, increases in numbers until about July 25th. Beginning about the first week in August the number of beetles present fall off rapidly. A few will persist until frost. Each adult female lays on an average of about 40 eggs. Sod land, lawns and permanent pasture are preferred for egg deposition. The eggs hatch in about 14 days into tiny white grubs which feed upon and injure the roots of grass and other plants. They grow gradually throughout the summer and fall, lie dormant over winter, resume feeding in early spring, finish their development by the middle of May then go into a pupal or resting stage; a stage in which the grubs transform into adult beetles.

## Control

Control of the Japanese beetle is often difficult. There are a number of control practices which may be used and which are more or less effective. The following methods are now being used: Spraying, trapping, soil treatment, planting plans, agricultural adjustment, and the colonization of parasites.

*Sprays.* There are many sprays that may be used to repel the beetle. So far none have been developed which kill large numbers of beetles. Beetles will leave most well sprayed plants, but they are not killed. They only move to nearby unsprayed plants.

*Traps.* Traps are effective in catching large numbers of beetles. While discussing traps I just want to say a few words about them. The question always arises as to just how effective are traps. They are only about sixty per cent effective and it is true they will not catch all of the beetles in any one community. However, they are effective in destroying thousands of beetles. To give you some idea as to the number

of beetles that can be caught in traps, I would like to quote some figures obtained several years ago in the heavily infested area in New Jersey: 1,200 traps with 10 gallon containers were operated in an area of approximately fifty square miles. Forty-seven tons of beetles were caught in these traps. The last year that we operated in the vicinity of Elkton we caught seven and one-half barrels of beetles in less than 1,000 traps. In Cambridge this past year we caught eighty gallons of beetles; that is about one and a half barrels of beetles, and when we consider the fact that there are 3,300 beetles in each quart you can see that traps do catch a lot of beetles.

*Lawn treatment.* Lawn treatment is an ideal way to retard beetles in cities and towns. We are going to ask every individual in an infested town to treat his lawn with arsenate of lead this year for beetle control. Lawn treatment is rather expensive. It calls for an expenditure of about $90.00 per acre, but when we consider the fact that one treatment will grub proof a lawn for a period of five years, it is an economic practice. If every individual in an infested town would treat his lawn, possibly from one-half to two-thirds of the breeding area of the Japanese beetle would be destroyed for a period of five years, so you can see that such a practice would accomplish real results in retarding and delaying the development of the beetle in any city or town with an isolated infestation.

*Planting plans.* By planting plans I mean the use of plant material that is not fed upon by the Japanese beetle. If ornamental gardeners would give careful consideration to their plantings, they could landscape their property, and landscape it beautifully, with plants that the Japanese beetle does not feed upon. By making such plantings now, one will avoid a costly spray problem which is surely to come ten or twelve years from now. If one is not going to be prepared to spray, I think it is foolish for him to plant, say a shade tree, that the beetle would defoliate every year, when he can plant one that the beetle does not feed upon.

*Agrciultural adjustment.* Many farmers inquire as to whether or not the Japanese beetle is going to put them out of business. It is not It is going to be a major pest and as I said before, it is going to be one of the worst pests with which we have ever dealt, but we are going to be able to live with it. The acute conditions which we will suffer at the beginning will be relieved materially by agricultural adjustment. There will possibly be some things that we can't grow economically under beetle conditions. These we will discard and replace them by something else that is not severely attacked. Then as time goes on we will learn better how to control the beetle. More people will practice control. With some crops we will have to change our planting dates, and possibly grow different varieties from which we are now growing. Corn, I think, is an excellent example. If we plant our corn so that it will silk after the first week in August we can avoid beetle injury. To do this in many localities it is going to be necessary that we change our planting date and in many places it is going to be necessary that we change to new varieties; varieties which we are not now growing. With time and ex-

perimentation, this will be successfully accomplished.

*Parasites.* Parasites and other biological factors are going to aid us in reducing the number of beetles. We are now energetically working on this phase of the work. The United States Department of Agriculture has imported into this country a number of parasites which are now being established throughout the heavily infested areas. In the heavily infested sections of New Jersey, which have been thoroughly colonized, the parasites are said to be accounting for about a fifteen per cent reduction in beetles. I do want to say that parasite work is subject to criticism. We are going to undertake this work and we know we are going to be criticized for the reason, it is a long time and expensive proposition. It may be eight or ten years before results from parasites will be noticeable and naturally many people will expect immediate results which will not be forthcoming. Thus we will be criticized.

## The 1938 Program

Now for our 1938 Program. For the past nine years, through the efforts of Dr. T. B. Symons, Director of the Extension Service and Dr. E. N. Cory, State Entomologist, the State of Maryland has made strenuous efforts to keep the State free of beetles. They have done everything within their means to delay and retard the beetle and keep uninfested territory free of beetles. We all know that they accomplished much in this respect. However, through lack of money the work was handicapped. In 1933 the money that we had available was reduced by 40 per cent and naturally the amount of work we could do was limited. In addition to this it was necessary for us to put more and more money into nursery and farm products inspection so that our nurserymen and farmers could ship into or would be guaranteed a market in a non-quarantined territory. So for the past few years the amount of control work that we were able to do has been far from satisfactory. Our last legislature made available $40,000.00 for retardation work. Now $40,000.00 is a lot of money, but when we consider the fact that we have twenty-three counties and the city of Baltimore to operate in, it is not a large amount of money for any particular area, as the money has to be proportioned and distributed over the State. While this is a large amount of money, it could be spent to advantage, say either in Cecil county or Baltimore city where there are heavy beetle infestations, and still not accomplish all that we would like to accomplish there. We could spend this money and accomplish a great deal of good, but we could not properly care for the situation in all infested areas, so naturally we would be subject to a great deal of criticism. If we are to spend this money, we want to spend it in such a way that we will accomplish real benefits. We have asked the officials of the Federal government to aid us in our program. They have been willing to cooperate and have felt that something should be done, but they feel that they do not have enough available money to do a real job, and as a consequence Mr. Lee A. Strong, the Chief of the Bureau of Entomology and Plant Quarantine,

U.S.D.A., has hesitated to enter into a program of work unless enough money can be gotten together to do a real job. He has felt that even with the amount of money that we have available, plus any that he could add to it, would not be enough to do the job as it should be done. As a result we have had a problem to get together enough money to take care of the situation here in Maryland. However, after careful thought and consultation with many people throughout the State we have devised a program whereby we can expand our $40,000.00 into a fund with which we can do about $120,000.00 worth of retardation work.

The program calls for thorough-going retardation measures in all localities and will consist of trapping, lawn treatment, spraying and the colonization of parasites. This is what we are going to do. We are going to divide the State into three areas; namely, the uninfested area, the lightly infested area and the heavily infested area.

In the uninfested or free territory we will continue protection by quarantine and undertake an educational campaign so that every man, woman and child will know the things that he or she can do to aid the State in keeping beetles out of that free territory.

The lightly infested territory involves those areas in Maryland which may have one or more towns or localities in which beetles have been found. In this area retardation work is to be done in an endeavor to keep the beetles from increasing in numbers and delay the time when these minor infestations will develop into large ones and radiate out into the surrounding country, involving other people in the area.

The heavily infested areas will consist of territory in which the beetles are doing serious damage. In this territory everyone has beetles and obviously it is impossible for the State or anyone else to take care of each individual problem. In this area large scale demonstrations are to be made to advise the people as to methods and means of controlling and retarding the Japanese beetle. We are going to conduct large scale field demonstrations on the use of traps, on spraying, on soil treatment and on agronomic practices. We are going to conduct research to find new and better methods of control. We are going to disseminate information on the known methods of control and we are going to colonize parasites in suitable areas. Now when I say we are going to conduct large scale field demonstrations, I mean large scale field demonstrations. I might illustrate that, with our proposed trapping demonstrations. We want to go into the badly infested section of Cecil County and select thirty or forty square miles for the demonstration. In that area our plan is to trap, and thoroughly trap, every farm and property in that area, and by thoroughly trapping I don't mean to place three traps on Mr. Jones' property, one on Mr. Smith's property and two on Mr. Doe's property. I mean, if Mr. Smith needs 100 traps we are going to put them there. If Mr. Jones needs 50 traps we are going to put them there, and if Mr. Doe needs 150 traps we are going to put them there.

How are we going to ask the people to cooperate with us? For the program as a whole, our budget calls for equal cooperation between the

state, federal government and the local people; that is, for every $1.00 that the State spends, the Federal government will put up $1.00, and the local people will put up another $1.00. In other words, considering the entire expenditure in any area, one-third of the cost of the campaign will be paid by the State, one-third by the Federal government and one-third by the local people. In the heavily infested area where we are putting on large scale control demonstrations, and in which the expenditures run into extremely large sums, we are asking the individuals involved to cooperate with us, and we are asking them to go along with the State and Federal government on a fifty-fifty basis. In other words, if the operation happens to be trapping, and we are cooperating with Mr. Smith in trapping his farm, we will ask Mr. Smith to put $1.00 for every $1.00 the State and Federal Government puts up. If Mr. Smith needs 100 traps to trap his farm thoroughly, we will say to Mr. Smith: "If you will buy and operate fifty traps the State and Federal government will put on your place and operate fifty traps." Of course you folks know that it will cost the state money to operate the traps, that being the case, the State is willing to pay Mr. Smith for operating the State traps, so we will say to Mr. Smith: "If you will agree to operate your fifty traps and the State's fifty traps, under our direction and supervision, we will pay you 1½ cents per trap, per day for a period not to exceed sixty days for the operation of the State traps. That will mean this to Mr. Smith, that at the end of the sixty days he will have earned approximately enough to offset the cost of the fifty traps that he bought. In other words, it will mean that for his labor and services he earned approximately fifty traps. After operating two years in this or a similar manner, with Mr. Smith, it will be possible for him to earn enough traps to equip his farm. It will be necessary for us to cooperate with Mr. Smith for two years in order to show just what can be accomplished through trapping.

For the cities and towns in which beetles are found, it would be a tremendous job to get together enough cooperators to take care of the situation adequately. In addition, the overhead in paying so many individuals would be entirely too costly. Therefore, in those areas we feel that it would be better if the local people could get together their money in a lump sum and add it to the State and Federal appropriations so that the work can be managed and undertaken under one head, and all of the territory throughout the town can be thoroughly and adequately taken care of. As to how the local money is gotten together we do not care. It may be put up in equipment, in labor, or services. The manner and method is entirely up to the people themselves. Personally, I think the purchase of equipment would be an excellent way to put a portion of it up because that leaves something tangible in the community. The purchase of traps appeals to me as being a good way. You will always have the traps. They will last a number of years if properly taken care of, and will be on hand for future use.

That is all that I have to say with regard to our program, but I would

like to have you people give me an idea of just what you think about this program and suggest methods whereby we might go about getting together local contributions. Personally, I feel that it is a problem that everybody should be interested in, and one in which everybody whether they have beetles, or not, should contribute toward. We operate only in infested areas, but those people who are not infested yet, benefit, because the purpose of this program is to retard and delay the beetles and save those not yet infested from infestation. I might say funds are being contributed from several sources. For example, in Baltimore, Anne Arundel, Calvert and St. Mary's counties, the county commissioners have appropriated money. I have assurances that the county commissioners in many other counties will put up the necessary money. In places the county commissioners will put up part of the money and the municipality, or territory involved, will put up the rest. In other places, possibly the municipality or territory involved will put up the entire amount. It has not been necessary to resort to this means, but in places it may be that we will have to resort to a campaign for subscriptions from individuals.

## TYPES OF COLD STORAGE MACHINERY SUITABLE FOR COLD STORAGE AT THE ORCHARD

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This subject in general is entirely too broad to attempt to cover except by being fairly specific. We might divide the field into several different classifications. For instance:

1. Precooling fruit for comparatively prompt shipment.
2. Quick freezing of fruit.
3. General storage for variable period of time.

We will confine our discussion to the third part of the subject, dealing with the design of plants and application of the proper equipment for storage at the orchard to avoid forced sale in flooded markets at depressed prices.

When we are called in to make recommendations on selection of machinery for a given project, in practically every case a building is already in existence, or the owner has preconceived ideas of what type construction he desires to use, so we can pass over this phase of the matter and turn our attention to proper insulation.

The tried and true type of insulation, of course, is sheet cork, this having proven most satisfactory over the years, two layers of 2″ thick sheets being the generally accepted construction for the ordinary storage employing temperatures of plus 30 to plus 40 deg. F. There are a host of other insulating materials on the market, some of which have come to the front in recent years with various degrees of success. There are none which have reached wide acceptance comparatively, and they have yet to prove the test of time. Whatever you choose for insulating

material, it is of prime importance that it be properly applied in accordance with the recommendations of the manufacturer, and that it be kept dry. Moisture is the enemy of any insulating material. Insulation is absolutely necessary for a satisfactory storage house, and those who attempt to reduce the overall investment by eliminating this portion of the job under the claim that their storage is buried in the side of a hill or well protected by shade trees, etc., are doomed to disappointment.

Let us assume now that you as the owner, have provided a well insulated storage house of given size, and will desire to buy the proper cold storage equipment to make this storage most valuable to you, in properly serving its purpose to hold the fruit over the market peak. The type of insulation is one of the important features that will be checked first by the careful refrigerating engineer, as his recommendation for the equipment is governed to a considerable extent by this fact. That is why we start with the promise of a well insulated storage house.

The next points of interest to be settled are the type and cost of available power and the availability and kind of water. It will simplify the problem considerably if elecric power is available, and for the purposes of carrying through our survey, we will assume motor driven equipment. Until recent years when water for condensing was not available in sufficient quantity, it was necessary to resort to a cooling tower or spray pond arrangement. When we mention sufficient quantity, we mean that approximately 1½ gals. per min, per ton of regrigeration is required while the equipment is in operation, if water is available in a temperature range of 55 to 60 deg. F., and of suitable character so that no excessive corrosion or damage to the equipment results. A greater quantity of higher temperature water is required, going up to about 4 g.p.m. of cooling tower water on a small-orchard-size system. However, in recent years, the economizer type condenser has been placed on the market which, after a fashion, is a combination cooling tower and condenser. When using this piece of equipment, the air is the final agent for carrying off the heat from the storage. The possible selection of an economizer to solve the condenser problem automatically eliminates any serious concern over the availability of water in large quantities as only a very small amount of make-up water is required.

The primary object of our cold storage plant such as we have in mind, is to protect the grower against suffering a loss either financial through a flood on the market, or loss of the produce itself through spoilage due to holding at warm temperatures after picking.

The commodity stored in the greatest volume, and in which I believe most of you men to be interested, is apples, and it will probably be of most interest to discuss the general design and construction of refrigerating equipment for this particular purpose. The same warehouse, of course, is available for short term holding of other fresh fruits and vegetables, where the seasons do not overlap with the main apple crop. To a certain extent these other commodities serve to smooth the peaks in the load factor or demand on the storage facilities.

There are a great many factors affecting the successful storage of apples. The care given the growing apple up to time of storage, probably has as much influence on its final condition and qualification for successful storage as any other one factor. The time of picking, care taken in handling the apples, are most important.

Now assuming the apples are delivered to the storage in good condition, there are four major conditions governing the success with which they can be held.

1. Temperature.
2. Humidity.
3. Ventilation.
4. Air circulation.

By correctly maintaining these conditions and buying equipment to cope with the volume of fruit to be handled under the atmospheric conditions encountered, the grower will be able to store his fruits most advantageously and reduce shrinkage, rot and decay.

Authorities seem to agree fairly well that the most successful apple temperature is about 32 to 34 deg. Other fresh fruits and vegetables as a rule are held at not less than this temperature, and ranging up to possibly 40 deg. with some varieties, so that the house will serve for several other commodities if equipped to handle the apple load.

The effect of temperature on the condition of fruit in storage, of course, is the same in all cases. With a rising temperature, the ripening becomes more rapid, and the term of storage correspondingly shorter. On the other hand, if the temperature is allowed to drop too low, there is danger of freezing.

It is important, especially with apples, where the temperature is to be maintained close to the freezing point that great care be taken to avoid variation in temperature.

## Humidity

It is only in the past few years that proper attention has been given to the control of humidity, and it is now agreed that humidity should be regulated to provide a balance between the moisture in the fruit and the moisture in the storage room. This condition is around 80 to 90% relative humidity for general fruit storage work. A low humidity results in shrinkage of the product through drying out, and a high humidity tends to deposit moisture on the apples, and favors the growth of mold.

## Ventilation

It is an accepted fact that fruits, and vegetables absorb carbon dioxide and give off oxygen up to the time they have reached the peak of their ripening process. After passing this point, the process is reversed. It is therefore important to provide some means of ventilation, which is generally accomplished in the smaller houses in the manner we will mention later under the application of air blowing units.

## Air Circulation

Greatest success can be secured when good air circulation is arranged for in the storage, not only because of necessity to maintain an even temperature throughout the rooms, but also in order that the moisture which has a tendency to deposit on any objects in the room can be picked up by the air and deposited on the cooling surface as frost. By proper location of the cooling medium, this air circulation can be induced naturally, or it may be by forced draft in the case of air blowing units. To encourage this air circualtion, the apples should be stacked on wood strips elevated 4 to 6″ from the floor so the air can travel under the barrels or crates with opportunity to rise fairly uniformly through the product. Obviously, these floor stringers should be parallel to the air flow or their purpose is defeated.

We have now touched briefly on the requirements of a good cold storage plant, and the stage is now set to decide upon the type of equipment to be used. Ammonia is the old standby refrigerant which has been used successfully for years, and no doubt will continue to be used for a long time to come. Freon-12 has also been used to a limited extent, and may gain greater favor.

The size or tonnage of the outfit is one of the first points to determine, and in arriving at a conclusion here, it is necessary to look at two sides of the problem. First, there will be a peak condition existing during the period when you are rapidly harvesting the apples, sorting and packing them and placing them in a storage at a certain rate of so many hundreds or thousands of bushels per day. The fruit will be at orchard temperature, say maximum of 75 deg., in this part of the country, and then the containers must likewise be taken into account as they represent so many heat units to the refrigerating engineer.

To make a satisfactory selection of equipment, it is necessary for you to establish some rate of entering the apples into the storage in order to arrive at the right tonnage. To this must be added the natural heat leakage, and losses through the floors, walls and ceiling. It is here that the type of insulation plays an important part, as the well-insulated house means obviously that less refrigerating capacity will have to be purchased than is the case with a house of uncertain or questionable insulating value. It is wise to be rather conservative and figure sufficient capacity to bring the fruit down to house temperature within maximum of 72 to 80 hrs., when received at the fastest rate that it can be picked, sorted and packed. This will assure you of the ability to hold the fruit the maximum length of time and thus get the highest market price.

After the field heat has been entirely removed from the apples, the job for the refrigerating equipment is then very much less, being merely a satisfactory holding of the storage at uniform temperatures. The selection of two compressors having very roughly 1/3 and 2/3 capacity of the total of peak requirements, is a very good method of overcoming this

part of the problem, although for the smaller man the cost may be prohibitive. This mention of relative proportion of machine capacity cannot be taken literally as each storage must be analyzed on its own merit and this will vary considerably. For the man who is only in position to purchase one machine, the alternative is a 50% capacity reducing device on machines running above approximately 10 ton size.

Having chosen the proper compressor or compresosrs, it would then be natural to decide on the running mate to this piece of equipment, namely, the condenser. If town or well water is available, the natural selection is horizontal closed type shell and tube condensing equipment, and it should always be located with plenty of room at the end for cleaning.

If water is very costly or not available in sufficient quantity, then the economizer type condenser would be the correct selection as previously mentioned. No hard and fast rule can be laid down as to when and where either of these types is the correct choice, but the refrigerating engineer can assist in making the proper selection for your particular condition. The economizer must be placed in an exposed location or near to an outside wall in order to make the duct connections as short and inexpensive as possible, as it is necessary to have a large quantity of air brought to the condenser and exhausted from it to the outside atmosphere in such manner that the exhaust air is not again picked up by the machine.

Now we are ready to discuss the method of inducing the refrigeration effect into the storage for extraction of heat from the product, and dissipating the heat of infiltration. The old style of installation still used with a high degree of success in many installations is the overhead coil system. In this method a bank of coils 4, 6 or 8 pipes wide, possibly 2 to 4 pipes high, is hung on the ceiling, running down the center of the room if not over about 20′ wide, or separated into two or more banks if the room is wider. It is necessary to take the ceiling construction into serious consideration for supporting these coils, and it must be remembered that the frost load accumulated on the coils is far greater than the weight of the steel pipe. 1¼″ size steel pipe is generally used with the smaller machine, and 2″ steel pipe in the case of larger installations. Pipe should never be laid closer than 6″ vertical and 6″ horizontal center to center dimensions for any reasons, and preferably 8 to 10″ to insure freer air circulation and the maintenance of this circulation even after a slight frost accumulation is experienced.

Insulated drip pans must be hung under steel coils of this description to catch the drip, and these pans must be properly equipped for drainage. In the case of long rooms particularly, this reduces the available headroom and should be considered carefully. The amount of coil surface is of vital importance to balance properly with the compressor capacity and to allow the equipment to operate at a reasonably high suction temperature in order to avoid excessive dehumidification. In other words, with a storage house that is undercoiled, either you will not be able to hold tempearture and the apples will suffer and the possible duration of storage time will be decreased, or if the compressor is over-sized to make

up for the coil deficiency, the system would operate at a sub-normal suction pressure. This results in a pipe surface much colder than it should be, and consequently the air in motion over the coils deposits more moisture on the cold surface than should be extracted, and the air in turn is going to seek moisture replenishment from the apples until a moisture balance is again effected.

The majority of storages constructed in the last six or eight years have been equipped with the air blowing type of unit, either of the dry surface type or spray type. Most of you have at least some slight acquaintance with this type of equipment, so in passing, we will merely mention that an air unit is a factory fabricated piece of equipment consisting of a nest of closely-wound welded coils in a steel casing with a fan over the coils, and a motor either on the fan shaft, or connected by V-belts to drive the fan. Air is drawn in at the bottom up through the coils, and discharged at the top under fan pressure ready for distribution throughout the house. This would describe the dry surface of air unit with only a very general control over humidity conditions. Where accuracy of humidity control is required, the use of the spray type unit of similar construction is recommended. These units include in addition a watertight pan under the coils, spray headers over the coils, and a pump to pick up the brine in the pan, discharge it through the spray heads and over the coil surface.| In this case the air is cooled by passage through and counter-current to the cold brine spray.

A very small individual room running not more than 20 ft. sq. or possibly 20′ x 25′ could be properly cooled without air ducts, but since we know you are all interested in larger rooms, we will pass quickly to a discussion of duct layout. Just as we pointed out the importance of the proper amount of coil surface, it is now necessary to select with care, the proper size air unit and the correct amount of air circulation. A proper selection of equipment up to this point can be entirely offset by a poor duct layout, the ducts, so to speak, being he final agency for delivering refrigeration to the fruit.

The ducts are hung from the ceiling and should be sized so that air velocity is maintained at approximately 1600 to 1800 lineal feet per minute. Consequently, as certain quantities are bled off to the areas closest to the blower, the size of the duct can be correspondingly reduced.

If the room is not exceptionally large, it may be possible to take care of air distribution with one trunk duct only, but if the storage is of unusual shape or size, branch ducts in addition may be necessary to accomplish proper and effective distribution. Slots or holes are arranged in the side of the ducts to throw the air toward the walls, and the number and size of these openings is very important. If they are too small, excessive resistance is set up against the release of air, and insufficient amount is discharged. If the openings are too large, too much air will be bled off quickly and will drop down to the floor and short circuit back to the air unit while the farethest extremities of the room will suffer because of having only a feeble distribution.

These ducts in apple storage are generally constructed of cypress lumber or some other water resistant wood. Long slots for discharge of reasonable quantities of air frequently equipped with hinged covers that can be regulated from the floor by chains. When designing a duct layout, it is necessary to take into account the location and size of beams, columns and any other obstructions within the rooms, and also the probable method of stacking the apples. Air slots should not be spaced to throw against the side of a deep ceiling beam, for instance, but rather the air must be thrown under this beam to serve the area on the far side, even if a section of auxiliary duct is necessary to accomplish this purpose. Best results will be accomplished if the container in which the apples are packed is of fairly irregular nature, which would result in voids between the packages to allow for air distribution to pick up the product heat. Particularly is this true during the first week when the fruit has been brought in from the orchard, and it is necessary to extract the field heat before the apple has become over-ripe. Also the height of the storage should be established and its capacity in bushels gauged with the expectation that the apples should not be stacked closer than 18″ from the ceiling, and preferably 2 ft. This depends somewhat on the total height of the room, the nature of the duct layout and the total length of the longest air throw from duct to extremity of the storage. Another point that is necessary is the allotment of aisle space, not only for proper handling of the apples and accessibility to the stacks, but for return of air to the inlet of the blower.

You will remember we mentioned the advisability of keeping ceiling coils separated to allow for frost collection and air movement through the pipes in event of using a system with ceiling coil layout. Now in the case of these air blowing units, we have the coils very closely wound with limited space for frost collection. We are speaking now of the dry coil type of unit. It is therefore very important to figure a unit with plenty of surface so that you can operate at the highest practical back pressure in order not to collect frost too rapidly. If the selection is not made properly by a capable engineer, or if you do not operate the plant approxmiately as it was designed, you may find that you have frosted one of these units up tight within two or three hours time, preventing the passage of air, and therefore temporarily destroying the usefulness of the equipment. Understand, frost will accumulate even when the system is properly designed, but it will be a very gradual process. Hence, it is necessary to place the air unit with its back against an outside wall and have a louvred fresh air connection with a damper entering through the wall into the back of the air unit at the bottom, and a similar connection, again with damper, at the top for discharging to the atmosphere. Also a drain is needed from the bottom pan of the air unit to carry off the condensate. This may be a little more difficult to arrange than the condensate drain from ceiling coil drip pans. In the latter case, we were close to the ceiling and now we are close to the floor. The answer may be to set the air unit up on piers or plat-

form in order to establish gravity drain to available sewer or point of disposal.

Now let us visualize the flexibility of operation of this particular air unit with the duct connections made approximately as we have already described. The damper on the fresh air connection can be opened, and the damper at the front on the inside of the room be closed, preventing return of air from the house. The upper damper to the outside would be closed. With this setting, the doors can be opened, and the house very quickly flushed out with fresh air, or temporary ventilation can be afforded. The fresh air damper can be cracked open for normal operation to bring in a small quantity of fresh air constantly. The defrosting problem is simplified in warm weather as the return of air from the room and discharge of air to the room can be shut off and both outside connections opened. In this case, warm air from the outside is being drawn through the unit, over the coils, and is discharged to atmosphere.

By applying modifications of this arrangement, it is possible for one blower to be backed up against a partition wall separating two storage rooms, and at the same time be close enough to an outside wall that the defrosting principle can be put into effect. If the rooms are to be used alternately, one blower can serve both. You could also figure that the rooms would be filled alternately, and the blower would be of sufficient size to take care of each room singly, while being filled, or both rooms after the field heat had been extracted from the apples. This degree of flexibility, of course, is not offered by the old style coil system.

We probably should spend a minute or two now in analyzing the layout of the equipment as a whole. After forethought has been given to the proper location of the blowers, this should be balanced against the location of the compressor and condenser in order to keep the equipment nested together as close as practical to avoid extra long runs of ammonia connections. It must be borne in mind that the ammonia suction line will drip at times, or it must be insulated even where passing through the storage house. It may be that by a very slight sacrifice from the ideal air unit location, that a very substantial improvement can be made in the layout of ammonia connections. If this in turn does not affect the duct layout adversely, it may be preferable to hold the air unit closer to the compressor. All of these factors must be balanced one against the other until the best layout is determined upon from every angle.

The extreme care in selection of the blower and diligence necessary in operation to avoid excessive frosting can be eliminated by using the brine spray type unit. The same principles apply to the placing of this type unit and the method of connecting, ducts, dampers, etc. However, by virtue of the brine spray on the refrigerant coils, collection of frost is prevented, and a more uniform humidity control is possible. If you appreciate the superior features of the brine spray type of unit, and the refinements of control that it provides, be sure that you buy a unit with the necessary corrosive resistant features. Eliminators, fan wheels

and fan scroll should be of stainless steel, shaft cadmium plated, and fan bearings chromium plated. The casings should be of heavy construction, not less than 3/16″ hot dipped galvanized steel sheets. The entire coil assembly including bracing should be galvanized after fabrication. If vital features of this kind are not incorporated in the design of the spray type units, grief will inevitably result as corrosion will make the outfit ready for the junk pile in 3 to 5 years.

In concluding the design of our apple storage, some thought should be given to the matter of control of temperature. If the house is not to be of sufficient size that you expect to have an operator in consant attendance, making periodic inspecion through the rooms, then certain automatic features should be employed to insure uniform conditions after the product is in storage.

There are too many possible variations for us to be specific within the limits of this paper, particularly when two or more rooms are involved. However, thermostat should control the room temperature, and as to just what instruments they actuate, to accomplish this purpose, the details of the layout will determine this.

I feel confident that the thought has passed through the mind of every man in this room as we have passed through the different phases of this discussion "Well, I don't stack mine that way," or "My layout isn't that way, and it works." Little deficiencies can be overlooked, and trivial departures from the best practice do not have ruinous results. However, a sincere engineer when assisting you to spend your money wisely will strive toward an ideal layout and selection of equipment to fit your particular needs. From this ideal, certain compromises may be agreed upon. This generally brings the recurrent thought after the first year or two of operation, "I wish I had done it that other way."

No doubt you have heard of the individual locker systems which are sweeping our rural communities with popular favor; possibly you expected to gather some information on this subject at these meetings. At any rate, our presentation would not be properly complete without touching on this matter, at least briefly.

There have been hundreds of these systems installed in the Middle West and Far West, with a sprinkling of installations evident in the East. Experience gained with these previous ventures is available to you men for judging the number of lockers that could be profitably installed in any given community according to the population within a reasonable radius.

Steel lockers running 18 to 20″ square and 30 to 36″ deep are assembled in a cold storage room for yearly or monthly rental to individuals. There are many of these operating with two or three hundred lockers, and in the larger towns there might be a demand for a thousand or more. The outstanding fact from all of the data available on this subject is the high rate of return to the owner who equips himself to serve the public in this capacity, and the speed with which the venture is a financial success. This statement is true when a company is formed

and a building and equipment erected for the locker system only. It is doubly true when the locker system is added to an existing cold storage plant, ice plant or something of the kind, where many of the facilities of the existing organization can be used.

## VIRGINIA EXPERIENCES IN BOX PACKING AND WRAPPING APPLES FOR FOREIGN AND DOMESTIC MARKETS

W. S. CAMPFIELD, Secretary, Virginia State Horticultural Society, Staunton, Va.

Mr. President, and Members of the Maryland Society: It is with pleasure that I bring you not only the greetings of the Virginia Society, but our best wishes for a prosperous New Year. We wish you neither a feast nor a famine, but rather a season of moderate crop with the resulting higher profits that the apple growers so richly deserve.

While the past season has been a most unsatisfactory one, from a marketing and profit standpoint, the cause of the situation need not be sought beyond the industry itself. There were not too many good apples in the United States this past year but as Mr. R. G. Phillips, Secretary of the International Apple Association has so well said, "there were too many good and poor apples," and the industry may be properly charged with the poor marketing judgment of having started the season by selling its off grade product first, thereby establishing a low market level with both quality and quantity and the poor quality had a tendency to discourage rather than encourage consumption.

The splendid work done by Appalachian Apples, the New York-New England Apple Growers Institute, the several middle-west advertising projects and the larger and better financed projects on the Pacfiic coast have brought definite results. From reliable sources reports indicate that there has been a marked increase in the consumption of apples thus far during the past season, much of which can be properly accredited to the half million or more dollars being spent by all of these projects, but from the standpoint of the eastern grower it is indeed unfortunate that he does not see the lack of wisdom of spending money to increase the consumption of apples and then fill the demand with an inferior and uninviting product. No manufacturing concern could survive with such unbusinesslike methods and it is no wonder that we find the eastern grower struggling along to keep his head above water, and the northwest growers almost completely submerged under what I am told, is an average mortgage indebtedness on their commercial orchards of from $600.00 to $800.00 per acre. It is a hard thing to say, but the sooner the northwest growers realize their hopeless condition and liquidate their industry by squeezing the water out of their very inflated financial set-up the better off they will be. But a financial re-organization of the northwest apple industry, resulting in a reduction of overhead charges, coupled with their much higher yield per acre, would give this section even greater competition than we have felt in the past.

While it is true that the east is not by any means free from a burden of orchard indebtedness, nevertheless our eastern orchards are not under the strangle hold of indebtedness that prevails in the northwest. Our greatest handicap is perhaps low yield per acre and the competition of our own low grade fruit. The latter is a problem that we must face squarely, and in the near future, if the eastern apple industry is to be saved from declining into general low grade bulk apple production.

As I pointed out at the recent Virginia Annual Meeting, the difficulty is in bringing about a unison of action that will result in keeping the low grade apples off the market. Nearly every grower agrees that it should be done but he wants the other fellow to do it; at least he wants him to do it first. Education is a slow process in a matter of this nature, particularly when a grower is hard pressed to pay his harvest crew and some huckster offers him a little ready cash for his cull pile. Therefore, we turn too readily to the weakness of the age and say, "let's pass a law," and that brings up many difficult questions, particularly in Virginia. After a number of years of study and thought of this matter I do not know just how a law can be drawn in Virginia that would be effective and stand the test of the courts. We hear many suggest the adoption of a law similar to that passed in Florida for the control of low grade citrus fruit, but that law, a copy of which I have studied carefully, can not be made applicable to apples. The Washington apple grade law is effective in that state but public sentiment is behind it. It was drawn upon the basis of orchard sanitation. In Washington, orchards that are affected with insects and disease and are not being properly cared for may be and are cut down. On the same basis they prohibit the sale and shipment of apples affected with certain insects and disease, except to by-product plants under special permit or certificate, but there are few farm orchards in the state of Washington and a large percentage of the growers strongly favor regulations that will protect not only the sanitation of their orchards, but their markets as well. In Virginia our orchard area is scattered over half of the state and with thousands of non-commercial or farm orchard owners it is doubtful if such a law could be passed and it certainly could not be enforced.

Again there is the problem of so drawing a law that it would prevent a grower from selling his product in bulk to a purchaser who has the opportunity to see and inspect the product. That would have to be done under what is called police regulation which is looked upon unfavorably by the courts unless it can be definitely shown that it is for the public welfare. It would be a drastic curtailment of liberty to say that a farmer cannot sell a pile of apples or other produce that he has grown if it is exposed for inspection and a buyer having seen it decides that he wants to purchase, even though you and I might think it was a bad deal.

There also arises the question of one or two states attempting to limit the sale of low grade apples while the other states continue to glut the markets with off grade fruit. This might correct itself in time but it

is difficult to get the growers of one section to unanimously agree to bear that extra burden for a few years until other producing sections would see the wisdom of such action.

Some have suggested that regulations controlling the sale of low grade apples could be more easily secured and made more uniformly effective through the National Government, but can we secure Federal regulation on a sufficiently flexible basis that it could be relaxed during short crop years and made more stringent during heavy crop years? Would not the Federal government insist upon apples being brought within all the crop control provisions to be applied to other crop under the proposed crop control bill? That would, I am sure, meet with bitter opposition from many growers. Thus the prospect for Federal regulation does not offer much encouragement.

Might it not be more practical and effective, although a more moderate step, to attempt through State Food regulations and the Federal Food & Drug Administration to improve the lowest grade of apples by preventing the sale or shipment as fresh apples of lots containing even a small per cent of apples with worm holes, soft rots, cracked scab spots, dirty fruit and require that all bulk apples shall be accompanied by spray residue certificates showing them to be within the spray residue tolerance? Those could be prohibited upon the ground that such apples are unsanitary and thus unfit for human food. Perhaps some slight change in your state law would be necessary but in all probability your present food regulations could be made applicable to apples sufficiently to put a bottom in the low grade. This together with increased funds for police inspection might be a splendid start in the right direction and this method would fit in nicely with the Federal Food & Drug Administration, which has already indicated that it would be willing to go along to the extent of regulating interstate shipments, provided the states would furnish the necessary inspection personnel.

In closing this phase of the subject upon which I have assumed to speak, I again want to emphasize that probably one of the most serious problems confronting the eastern apple industry is that of glutting the markets with our low grade fruit while the better grades are too rapidly approaching over maturity in cold storage because of no demand.

## The Eastern Apple Crate

Since I came to Virginia from the apple section of the state of Washington twenty-three years ago, there has been a quest for a package that would be more suitable for both domestic and foreign markets than the barrel. While the barrel has many advantages so far as export handling is concerned, it is not a suitable package for most of our domestic markets. There are, however, a few domestic markets which still prefer the barrel as a package for small sizes particularly the district around Atlanta, Georgia, to some extent in New York as well as a few other scattered markets.

I came to Virginia as an experienced Northwestern box packer to teach box packing as it was and still is carried on in the Northwest and had felt that box packing would be thoroughly applicable to the east. I soon learned however that the lack of proper lumber to make boxes with the qualities of those used in the northwest together with the absence of box packers, and the lack of knowledge of the entire orchard crew in handling boxes, presented too many obstacles to be readily overcome. Packers from Georgia and Florida know to to wrap, they know the system of packing but coming as they do from the handling of soft fruits such as tomatoes, peaches, etc., they do not put up a pack in a northwestern box that will stand up in storage. In fact we had the same difficulty with the California orange packers going to the northwest and found that they were only efficient when under the supervision of a thoroughly experienced and competent northwest apple packer. There is also another factor which I think enters into the difficulty of making Eastern apples stand up in the northwest box, and that is, the greater amount of juice in the Eastern apples result, I believe, in a greater shrinkage in storage. At any rate my experience in packing Virginia apples in northwestern boxes coupled with a number of years of experienec in handling them for market while I was with the American Fruit Growers, convinced me that it is exceedingly difficult to put up a northwest box sufficiently tight to hold up in storage for any length of time.

As you well know, about ten or twelve years ago the basket came into considerable favor particularly when the flat bottom or tub basket was brought out. It was quite natural that it should have gained favor rapidly with the grocers because the labor was accustomed to a round package, they knew how to face, how to fill and soon learned how to stack and load baskets, from their experience with the barrel, although it was difficult to teach the necessary careful handling of the basket to avoid bruising. Growers of this section quite generally do not seem to realize the important of overcoming bruising. My observation in visiting 65 markets is that apples are handled more roughly in the Appalachian district than in any other commercial section. On the other hand, the market demand has been for more delicate handling and less bruising of apples, and while the basket won favor over the barrel in domestic markets, it nevertheless has not been thoroughly satisfactory. However, we must not lose sight of the fact that many markets today prefer the basket over any other package for eastern apples and probably will continue to do so for many years, particularly is this true when the pack shows a rather large bulge. It is a psycology of market people that they want to feel that the package is filled to its utmost of capacity.

A number of years ago the New England growers began to grope around for a new package. They tried the basket to some extent but it was not suitable for some of their tender varieties, particularly the McIntosh. It might be well to describe briefly the harvesting and marketing advantages found in the New England apple district. They are close to the markets, the lower part of the New England states contains

a great many large cities, so that most of those growers are within easy truck haul of a large consuming center and I find that many of the New England growers contact only one or two markets in the sale of their entire crop and perhaps only one or two dealers or retailers in each market. The weather being cool, they store most of their apples, as picked in orchard crates in their own air cooled storages or barns and then as the demand develops they sort, pack and haul them to market, usually delivering by truck the morning the dealer wants them. The growers used their regular orchard crates, sending a truck load in and bringing back a load of empties, etc., until their crop has all been delivered. There was a box in use in New England called the New England box, but it was of an entirely different size and shape than that used in the northwest, or the present crate, and can be ignored for the purpose of this discussion.

Because of the loss and inconvenience of sending the apples to market in expensive and heavy orchard crates there developed a demand for a similar crate that could be retained by the purchaser and this was made possible by constructing a crate of lighter and less expensive material but similar in shape and size to the regular or permanent orchard crates. That is the history of the development of the Eastern Apple Crate or box that has been increasing in popularity in the last two or three years. In the New England markets you will find apples handled much more carefully and showing practically no effects of brusing.

The New York-New England growers in conference, adpoted the name of "Approved Eastern Apple Crate" and agreed that the cubical content of their crate shall be no less than 2618 cubic inches nor more than 2645½ cubic inches. The 2618 cubic inch crate termed their style T & B shall be 17 inches by 14 inches by 11 inches inside measurements; and the 2645½ cubic inch crate is termed style 5 shall be 17½ inches by 14 inches by 11 inches inside measurements; with inside posts of 1½ inch face, and that this crate be marked minimum volume 1-1/5 bushel.

In Virginia two or three different size crates are in use. This I believe to be a mistake and think that we should go a long way in following the dimensions recommended and adopted by the New York-New England growers who developed this crate. Some of our growers have used the 1-1/8 bushel crate, some 1-1/5 bushel and some 1¼ bushel size. The railroads however have been making many weight tests throughout the state this year for the purpose of insisting that a standard crate be used in shipment and for the further purpose of assigning to them an estimated weight, which will mean that crates of different dimensions than that finally accepted by the railroads will undoubtedly be handicapped by "excess" weight charges.

The original idea of the New England growers was to fill the crate with loose unwrapped apples without any pressure and in many instances without a top or lid. The New York-New England growers in general do not wrap or pack by count in this crate. Later as it became apparent some arrangements must be made for a top, some

began using a rectangular cushion pad held in place with two or three wooden strips to keep the apples from being jarred around and also to prevent pilfering which was a considerable factor when open crates were shipped.

In Virginia many of our growers have purchased crates with a two piece wooden top similar to that used on the bottom. Some are using a cushioned pad and some a corrugated cushion in the bottom and top and the more recent method of packing is to wrap the apples in oil paper wraps and use the diagonal pack with the count stamped on the box, the same as the northwest but with not as much precision as to size and system of pack and only enough pressure to keep the fruit from bruising. Some are even attempting to put a slight bulge on the pack. This, however, defeats the original idea and gives the purchaser entirely too many apples. New England's idea was to perfect a crate of sufficient size that it would hold a bushel of apples loose and not quite reach the level of the top of the box, thus avoiding all bruising or cutting when the crates are stacked. If we begin to pack it with a diagonal pack and a slight bulge we are educating the trade to demand more apples than they should expect for a bushel.

In order that I might be better prepared for this discussion I have made by letter, a hurried survey of both the markets and the growers to learn what I could of their experience.

Among the growers I find those who are perhaps over enthusiastic in recommending the use of this crate as a market package and who predict the doom of the basket and barrel entirely, while others are more moderate in their endorsement, saying that it is preferred in certain markets when properly packed with a good grade of fruit but that it must yet go through the process of being accepted by a large number of important markets in this country. Based on my own observations and the experience of the more conservative growers, I would advise adopting this box only conservatively. In other words, to be sure your market wants it before you attempt to pack all of your apples that way. The changing to a new package is rather serious and sometimes costly. I want to impress upon the growers one thing that you can remember so long as you are in the perishable produce business, and that is that, perishable produce markets, want what they want, when they want it, and as they want it, and theory be damned. That is one industry that does not respond to theory or the dreams of theorists. You and I may sit down and work out the very finest package that theory can perfect and if the market does not want it we are licked. There may be no rime or reason to what the market wants, or the way it wants it but do not attempt to grade, pack or ship fruit to a market without finding out whether that market wants it that way. It is an old saying in Wall Street, "do not buck the market" and it is even more true in the perishable markets, do not attempt to sell the market even a good product put up in a way that market does not want it.

Another important matter in considering the use of this package and

which I predict is very likely to ruin its reputation is, that there will be some growers who will attempt to use it for poor grade fruit. If we will pack only number one grade or better, of good color and mainly 2½ inches up, in this crate, and do a little pioneer work in the markets that have not yet accepted it, I think there is a promising future for it, but unfortunately there are in all commercial apple growing states too many growers who want to take advantage of the buying public as well as of the more reliable growers of the industry by attempting to pawn off low grade cull apples dolled up in an acceptable pack or package. If that practice prevails in the use of the Approved Eastern Apple Crate in the next few years, it will soon be doomed. Virginia did her full share and perhaps a little more to ruin the reputation of the basket when it became popular in the southern markets until now many of those markets look upon the basket as a package containing only low grade fruit. There is no assurance that the box will not follow the same unfortunate path to disrepute. It is unfortunate that there is no way to protect the grade of apples to be packed in this box. If apples smaller than 2½ inches are packed in the crate they need not be wrapped but rather by the face and fill method. Apples larger than 2¼ inches may be left unwrapped for immediate and nearby consumption, but if they are to go in storage for any length of time oiled wraps or shredded oil paper is a protection against scald as well as bruises.

One of the larger Virginia growers who has had two years' experience with the Northeastern crate advised that it has been quite generally accepted by many domestic markets and this particular grower seeks a wide distribution. His method has been to wrap the apples and pack them according to count. He reports that the gross returns on apples sold in crates is greater than that in bushel baskets. He states that it is his opinion, "that the box will supersede the basket gradually and ultimately to a very considerable extent either jumble packed and unwrapped, or wrapped and packed by count." He emphasizes the fact however that the growers must watch the demand very carefully for this crate and that the market will ultimately determine the extent of its use. His personal opinion is, that the crate is more suitable for the packing of the better grades of apples than is the basket. For smaller sizes he advocates the jumble pack. His experiences indicate that it cost about five cents more per crate to pack with apples wrapped than it does to pack undrapped in baskets, that includes the labor cost. He pointed out that while the box itself cost more than the basket there is a saving in storage rates, at least in certain storages. Experience of this grower in exporting apples in crates has not been very extensive and then mainly to France where it has been received with some favor. However, growers must bear in mind that foreign markets insist upon a tight pack and that this box is not constructed of material that lends it to a bulge pack sufficiently tight to carry to foreign markets. Therefore, it would seem that its future in foreign markets will depend somewhat upon a change of sentiment regarding the tightness of pack re-

quired in most foreign markets at present.

Another large grower advises that this is his first year's experience in packing the Eastern Apple Crate to any extent and that most of that pack is still in storage. However, he points out that the cost was about five cents per box more than the basket and emphasizes that if the Eastern Apple Crate is to gain sufficient favor in domestic markets to compete with the Northwestern box pack, growers must take steps to protect the quality of fruit packed in the box. He particularly emphasizes the importance of color. This grower even suggests the advisability of protecting the crate by law that would prevent packing of anything but U .S. No. 1 grade or better. This is a good suggestion but it is doubtful if such a law would stand the test of the courts, for unless the package could be patented its use could not be restricted by law.

Another large grower who has used the pack very extensively this year and in a small way last year, is very enthusiastic in his endorsements. This grower pointed out that the actual cost of a wrapped box and a wrapped basket is approximately the same. His experience with face and fill unwrapped in both packages shows that the box is slightly cheaper. He advises caution in packing many for foreign markets.

Another large grower of and dealer in apples pointed out that the returns from apples packed in the Eastern Apple Crate has been greater than from the same grade of apples packed in baskets. He has had little experience exporting apples in the crate and is not yet convinced that it is a suitable export package. His opinion is that the box will supersede the basket in New York City and other northeastern markets. He also suggests that if small sizes are packed in the crate they should be faced and filled and unwrapped and if intended for storage, plenty of shredded oil paper should be used as in the case of the basket. The above is from the experiences of some of the larger and more reliable growers in Virginia whom I consider conservative.

The many replies I have received from dealers, and my personal visits to the markets indicate that the crate is generally acceptable through New England and the markets in the New York City area and to a lesser extent in some midwest markets. As we go west, I find the crate readily accepted in such markets as Cleveland, Pittsburgh, Columbus and to some extent in Indianapolis, but at the time I was in the markets they had appeared in the middle-west only in very limited quantities.

In the southern markets, I find little encouragement in the letters I received in response to inquiries from many of the leading dealers except for the Atlanta area. Two years ago there was a considerable shipment of extra fine Virginia Delicious and Stayman Winesaps sent to Atlanta wrapped and packed according to count. I happened to be there when some of this shipment was in the markets and it was being received very favorably, in fact, the quality of that fruit was fully equal to Northwest fancy, and indications are that the Atlanta area has quite generally accepted the Eastern Apple Crate. However, we must remember that the southern markets experience a very definite change about Christmas

time. They have taken eastern apples in baskets very readily up to and shortly after Christmas, then they turn definitely to northwest boxed apples. In the south the test is going to be from now until Spring to determine whether or not our apples in Eastern Apple Crates actually will meet the competition of the northwestern box pack. One large dealer in Atlanta advises that his firm does not favor the Eastern Apple Crate but rather prefers the basket. My personal observation and knowledge of that market leads me to believe that this particular dealer is an exception. One of the leading dealers in New Orleans is very favorable to the basket but suggests that if a change is to be made it should be to the bushel crate. While his experience had been limited with this crate he is very favorably impressed. From the Louisville, Kentucky market comes a letter urging that the growers from this section stick to the bushel basket. A dealer operating quite largely along the Southern Atlantic Seaboard who has heretofore been more favorable to the barrel than the basket writes that in that section the Eastern Apple Crate is growing in popularity and that he believes it will largely supersede the basket. His reason was that there had been so many inferior apples received in baskets that many people think apples from this section packed in baskets are not good apples and that it won't take long to ruin the reputation of the crate unless it is protected in some manner as to grade. This dealer thinks it would be a grave mistake to pack anything below a U. S. No. 1 in crates and that the basket should be used for packing all low grades. While this particular dealer emphasizes that he is very favorable to barrels and has been advocating the use of the barrel very strongly throughout the southeastern section, he expects next year to divide his purchases between the barrel and the Eastern Apple Crate. I might say there are some few dealers in the south who still prefer the barrel. The area from Atlanta, to Birmingham to Montgomery to Macon uses many small apples 2 inches and 2¼ inches and they will take them very readliy packed in barrels.

A large selling organization in this section emphasizes the fact that the chain stores are quite generaly more favorable to the bushel basket than the crate but my personal observation is just to the contrary. The chain stores, at least the chain store managers, like the crate because it is a better display package. They fit more closely together on the floor or in display racks than the basket and have a greater salvage value.

From a large New York handler of apples from this section comes the information that the York Imperials have done as well or a little better in the crates than in the baskets but not sufficiently to warrant the increase cost of packing in crates, but that his experience with Delicious and Stayman is that they will sell better in the Eastern crate even though the crate may be packed unwrapped. He attributes this largely to the fact that there is less bruising in the crate when properly handled. This dealer suggests that what is needed is a 1-1/5 bushel crate and he states that larger crates do not usually bring any premium. In his opinion the crate holding 1-1/5 bushels will have an advantage

in meeting the competition of the northwestern box which as they pack it with a bulge is only slightly larger in capacity than the cubical contents of the so called standard bushel.

From another active New York broker comes the information that it is becoming increasingly difficult to sell bushel baskets in that area and that the crate is a desirable package. In fact this broker says they have to discount the basket and even at that the trade does not want it. The main reason offered by this firm for the acceptance of the crate over the basket is less bruising and larger quantity of apples but growers must not lose sight of the latter point.

In closing I would suggest that the larger growers could well afford to begin packing their better varieties of larger size, say 2½ inches and larger, and at least a U. S. No. 1 grade, in the Eastern Apple Crate, either wrapped or unwrapped as the market may demand. While there is absolutely no use in further emphasizing it, nevertheless, I must say again that we will soon ruin the reputation of the crate if growers begin putting the class of junk in it that they do in baskets.

For the small growers I would advise carefully studying the situation before switching over, but I believe the tendency is going to be toward this crate and if you are selling your apples mainly from Philadelphia to the northeast you need not hesitate to pack in the crate. If you are selling largely in the middle-west it would be well to contact your connections and learn their reaction before turning to the crate exclusively. As to the south, I think the crate will certainly go well in the Atlanta area and to a lesser extent, along the Atlantic Seaboard although that section will take a lot of baskets and some barrels. West of Atlanta perhaps more pioneering must be done before the crate is definitely accepted. I found little interest in the crate in Birmingham, New Orleans, Baton Rouge, Greenville, Jackson, Memphis, Chattanooga and Nashville, but most of the dealers were of an open mind and by another year the crate may spring into favor in those markets as it did in the Atlanta market.

## WINTER INJURY TO PEACH BUDS

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When the earliest explorers visited this section of the United States, the peach was found growing wild along the Atlantic Seaboard as far north as Philadelphia. However, the peach is not a native of this country, as some of the early botanists assumed erroneously. In this part of the United States, at least, it is traceable to the Spaniards who founded St. Augustine, Florida, in 1565, and who brought with them peach pits among other plant seeds. The Indians, especially members of the Creek, Cherokee, and Choctaw tribes, were quick to adopt the peach and other improved fruits of the settlers and to disseminate them rapidly.

Since the peach can grow as a naturalized plant over that part of Maryland east of the mountains, we can assume that climatic conditions here are naturally more or less suitable for the growth of this tree. This is especially true, since minimum winter temperatures restrict its extent of distribution more sharply than any other of our temperate zone fruits. Even in this section, where the peach can exist on its own, orchardists know all too well what an exceedingly temperamental fruit they are growing and to what hazards their peach trees are subject at the moods of the weather.

Some of the factors, such as cultural methods, which raise or lower the degree of hardiness attained, may be controlled by the grower, at least to some extent; other factors, like climatic conditions, are completely beyond any power of regulation by the orchardist or are practically so.

The greatest average sources of weather loss to peach growers in Maryland, like all of the East, are low temperatures. There are those, however, who agree with Professor Bradford, formerly of Michigan, who asserted that, "Winter injury is not wholly harmful. It is to some extent a safeguard against overproduction and for the man who chooses his location wisely and manages his orchard skillfully, it is in this way something of an ally." In other words, according to this angle of consideration, it is generally the wise and skillful grower who has a crop of peaches in seasons whey they are worth real money, while almost anybody can have a full crop in years when the national crop is a bumper one and prices in consequence are distinctly low.

While Professor Blake of the New Jersey Agricultural Experiment Station has classified hardiness in the peach under 19 separate divisions, this discussion will deal chiefly with winter injury to peach buds, particularly to the fruit buds, for it is in these latter that the grower is interested primarily; from them comes the fruit, if nothing untoward happens, with which the grower hopes to pay his operating expenses and to clear a profit for himself.

All observant fruit growers know that the different parts of their trees vary in their ability to resist cold injury. Many different factors functioning as a unit determine the relative hardiness, or lack of it, of any tree or part thereof and consequently the injury, if any, following a given peroid of cold weather. Some of these factors can be separated and classified with accuracy, either directly or by a process of elimination or both; others are still unknown as separate individuals, although their presence, like certain undiscovered elements, is suspected only by their effects.

## Winter Killing of Leaf Buds

The leaf-buds when fully domant tend to be just as resistant to low temperatures as any part of the peach tree and are usually more resistant than the fruit buds. Apparently their death is due to a killing freeze

which comes early in the winter. Sometimes, however, the leaf buds may be killed on twigs on which some of the fruit buds are not killed; when this occurs, one may see fruit borne on twigs having few or no leaves. After the disastrous winter of 1935-36, certain southern Pennsylvania orchards bore in 1936 fair crops of peaches on trees at least parts of which had no leaves for the last foot or so along the wood of the previous season; an untimely killing freeze in early October was responsible in this case. The same unusual situation occurred as a result of the severe winter of 1917-18; it was reported that in a certain peach district in northern Ohio 90 to 95 per cent of the vegetative buds were killed, though a considerable number of the fruit buds survived. Leaf buds ordinarily are not injured during the winter unless the entire twig is killed, so that in instances such as these two it has been suggested that the leaf buds might not have been frozen to death, but rather died after the supporting tissue at the base of the buds had been killed.

### Bud Injury Without Killing

Sometimes peach buds are injured but not killed. In New York in 1915, the pith areas in the buds were discolored, the blossoms opened late, but produced a crop. At South Haven, Michigan, in 1889, many such buds blossomed normally but failed to set fruit, even though the discoloration of the pith was very slight and the injury apparently negligible. The only positive way of determining the full extent of such injury to fruit buds is to wait and see what happens.

### Temperatures Killing Fruit Buds

What is the temperature at which fruit buds of the peach are killed? As has been indicated, this is influenced by many factors. The temperatures reported as causing the death by winter freezing of peach buds have varied from 8 degrees F. above zero to -23 degrees F. below zero, according to the literature surveyed in the course of preparation of this paper. This is a total range of 31 degrees F.—quite a wide variation indeed in these reports from reliable sources, even though they do cover many varieties of peaches grown under all possible conditions and in all states of vigor.

Professor W. H. Chandler, a national authority on freezing injury, says that a temperature of -13 degrees to -16 degrees F. will usually kill fruit buds of the peach and that in sections where nights are that cold in 1/3 to 1/2 of the winters, peach growing is not likely to be profitable.

As Professor Bradford observed, the killing of one bud in a comparable pair at the same node, while the other one survives, is evidence enough that no definite temperature can be stated as being fatal to peach buds.

It is likewise necessary to make a distinction between the killing or the injury of dormant fruit buds by steady cold and also by variable degrees of temperature which may shift from low to high, then back to low again. That this is of importance has been observed by several

workers and the more recent work in West Virginia has confirmed this observation.

In his classification of hardiness in the peach, Professor Blake made separate classes to cover these two different types of hardiness. A peach in the first group with high resistance to consistently low temperatures but without warm days at intervals during the period, as for example Chili, Greensboro, and Cumberland, may not rank as hardy as other varieties when the winter temperatures shift from 60 to 70 degrees F. to zero or below, then may reverse and alternate again in the same manner. Pallas, a honey peach, and Ambergem, a newer variety from New Jersey, are classified by Professor Blake as being resistant to this sort of treatment, although in a consistently cold winter, they are not as winter hardy as Chili.

The suddenness of drop of the temperature has considerable to do with its destructive effect and the duration of the cold is likewise important. All authorities agree on this statement. In Southern Ohio, the Northern Panhandle of West Virginia and the central western area of Pennsylvania there was demonstrated the destructive effect of a rapid temperature drop on January 22, 1936, when the thermometer dropped from considerably above freezing to -20 degrees or more below zero F. within 8 hours. In consequence, the destruction of fruit trees was unparalleled in the history of this region.

It was rather surprising in the course of the winter injury survey in Pennsylvania to learn how few fruit growers possessed thermometers of any kind. When those thermometers located improperly for registering the air temperature with reasonable accuracy were eliminated, very few cases remained of reliable temperature records for the desired critical periods. This is why the pomologists were forced to rely so much on the experiment stations and the U. S. Weather Bureau for accurate temperature information; when these places were not well located in an orchard district so as to be fairly representative, the temperatures from even these sources meant very little.

### The Rest Period and Bud Killing

All authorities agree that peach buds of the same variety differ in hardiness at various times during the winter. This is due in part at least to what is termed the rest period: this is defined as that period in the annual life cycle of a plant in which it will not grow, no matter how favorable are environmental conditions. Autumn frosts are not necessary to force our deciduous trees into their rest periods; even in those parts of California where frosts are unknown, deciduous trees usually stop growth and go into their rest periods in summer or in autumn just as in other sections of the country. There also, young trees may grow till November or December, when cool weather gradually checks their growth, and they then go into their rest period.

In general, the later the trees begin their rest period, the later they

are to come out of it and the less is the tendency for the fruit buds to commence growing during warm spells in winter. So far as fruit bud hardiness is concerned, overfertilization, late cultivation, heavy pruning, irrigation, (where this is practiced,) and extremely fertile soils, tend to keep the trees growing late, even until frost kills the leaves. It is well to point out, however, that these same cultural conditions, which make for greater bud hardiness by prolonging the growing season and retarding the time the tree goes into its rest period, are the very ones which induce tenderness in the wood. While late vegetative growth may in certain years result in less winter injury to the fruit buds, it lays open the tree to enormously increased possibilities of wood injury. Since we cannot predict accurately what sort of winter we are to have, we can take no chances in securing a latter period of bud hardiness in this manner. If the wood is killed or seriously injured, hardy fruit buds may avail but little.

A certain amount of frosty weather is required to bring any of our deciduous fruits out of the rest period so that they blossom and leaf out in a normal manner and in the usual period for the locality. In the case of the peach, but very little cold is required to do this, so that even in early winter this fruit has passed the most profound depth of its rest period and is ready to resume its life activities, especially the swelling of the buds, when temperatures are high enough to permit this sign of a resumption of growth activties. The drastic failure of the Georgia peach crop in 1937 was caused by a period of untimely warm weather in January which forced the blossoms about a month too early.

As an example of the effect of the unbroken rest period in preventing winter injury, the following may be cited from a report by Dr. Cullinan of the U.S.D.A.: At Fort Valley, Georgia, in the spring of 1932, the blossom buds of the peaches swelled but little during late winter, because of a lack of cold sufficient to break the rest period. These buds were not injured at temperatures which caused considerable injury to buds of the same varieties located much farther north; these had been out of the rest period and they were responding to temperatures favorable to growth.

Professor Blake has pointed out the fact that when peach buds are exceptionally large in autumn, many who have failed to observe this original condition are prone to infer that swelling has taken place since the onset of winter, when this may not be the case.

At what temperatures will peach buds resume growth once the rest period is broken? Observations in New Jersey showed that peach buds make no perceptible increase in growth when the maximum temperatures remain as low as 45° to 50°, but the buds give no external evidence that such is the case. The opinion in New Jersey was that temperatures of 40° to 50° are ideal—that they are neither too warm nor too cold.

It requires some time in New Jersey for temperatures of 50° to 60° to break the rest period of peach buds in December and January. However, the same temperatures in February result in a much greater growth

response in the same period of time. Once the rest period is broken, blossom buds will develop rapidly when temperatures are favorable for growth. Thus, in late winter, the fruit buds farthest advanced will be most easily killed by low temperatures.

Investigations in West Virginia have shown that the apical buds—those at the tips of the shoots—were the first to break their rest periods in January, followed by the median and basal buds in order. After the rest was broken, the apical buds were likely to be started into growth by warm spells. Thus, unfavorably low temperatures in January and February, according to the West Virginia experiments, usually injured the apical and median buds more than the basal ones. This apparently held in early winter, also, at a time when the buds were still in the rest period, but the greater tenderness of apical and median buds at this time, however, is probably due to immaturity. It is a matter of rather general agreement that at all times during the dormant season, the basal buds are in the main the most hardy.

If the most distal buds survive, the flower buds farther down may not develop enough to produce fruit; but if the distal buds are killed, the more dormant basal buds may survive and produce a crop ranging from partial to full, depending on circumstances. This explains in part why so many peach orchards have borne a crop of peaches following an earlier prediction of the owners that all of the peach fruit buds had been killed.

## Site and Winter Killing

There is probably no other topic in the literature of low temperature injury to fruit trees on which there is closer accord than in the relationship between site and winter killing of both buds and wood.

Most growers in selecting relatively frost free sites for peach orchards have obtained at the same time sites on which the trees attained the greatest possible degree of maturity. In so doing, relatively low, moist areas, often with soil of excessively high fertility, were avoided. In the disastrous winter of 1935-36 in Pennsylvania and Ohio, much heavier killing of peach trees and buds was noted in orchards on low sites. Such unfortunate locations not only delay ripening of wood—hence causing injury by immaturity,—but also the trees in these low spots are usually subject to temperatures lower than on the higher land adjoining, thus increasing the potential amount of injury to both bud and wood. No exceptions to this have been found in peach districts not immediately adjoining large bodes of water or where some extraordinary condition did not prevail.

The actual elevation above sea level, although apparently of prime importance in New Jersey, has not been as important inland as the relative elevation above the surrounding country. A comparatively slight difference in elevation may be sufficient to favor the higher areas. Somewhat lower locations were not always unfavorable if there was

possible an unhindered flow of cold air away from the orchard to a still lower area. Very slight slopes, if the expanse were relatively broad, resulted in excellent air drainage, an earlier survey in Pennsylvania showed.

Not only is air drainage important but also the surface water drainage of the land and the internal water drainage of the soil should be stressed. These are matters of common knowledge, although they are sometimes overlooked, chiefly by inexperienced persons.

In securing this superior air and water drainage, windswept sites with too shallow soils have not always been avoided. On such sites, the winter of 1935-36 caused considerable damage to peach trees in Pennsylvania, both from the exposure to the strong winds at below zero temperatures and from weak vegetative growth, hence lowered resistance of the trees. There is in that State at least one mountain orchard in which the trees at the lower edge were injured because of poor air and water drainage and also late delayed wood maturity; the upper part of this same orchard exhibited severe winter injury to trees and buds because of the full exposure to a below-zero gale of trees low in vegetative vigor.

Some of the effects of temperatures, rest period, site and exposures, fertility, and the like on the degree of winter injury have been discussd. There remains a miscellaneous collection of items, each of which has its effect on low temperature killing.

A heavy crop, especially when left unthinned or when not sufficiently thinned, has a bad reputation for intensifying the degree of subsequent injury. Exhausted trees have lowered powers of resistance. Pruning the trees previous to periods of injuriously low temperatures has resulted in a heavier loss in numerous instances; why this should be is not known. Trees which had been winter injured in previous years suffer generally heavier damage than those undergoing trial by cold for the first time.

Trees weakened by any casual agent are usually injured more severely. Leaf curl, San Jose scale, premature defoliation, borers, and drouth all exact their toll. Vigorous trees likewise have much greater recuperative powers which are low or lacking in weakened individuals.

Excessively dry summers, when followed by heavy autumn rains, have encouraged in certain instances, a resumption of vegetative growth and at times fall blossoming has occurred. In such an event, winter injury of some degree nearly always follows, even in mild winters. There is, of course, little the grower can do about this situation, other than to so manage the soil so that it will hold as much available moisture as possible, in an attempt to avoid the premature checking, then later renewal of growth.

Mulches spread on the surface of the soil about the trees and applications of whitewash on the tops have been applied in numerous attempts to keep peach trees longer in the rest period. However, while whitewashing has had the effect of retarding the time of blossoming by as much as a week, it has had no appreciable effect on winter hardi-

ness of the tree, except in regard to "sunburn" injury on the trunks which is a problem in certain regions. The air temperatures regulate the breaking of the rest period and the resumption of growth; soil treatments, as mulching, have no effect, as peach trees will bloom when the soil about their roots is frozen.

## Varietal Differences

Almost every publication dealing with the culture of peach trees lists certain varieties found to be relatively hardy and, likewise, those consider to be tender. The agreement between a fair number of such lists is very striking.

Older varieties classed generally as being hardy are Arp, Chili, Carman, Rochester, Greensboro, Champion, and Belle. Newer ones are Oriole, Marigold, Cumberland, Eclipse, Golden Jubilee, South Haven, Radiance, Primrose, Buttercup, Rosebud and Massasoit.

The varieties Elberta and J. H. Hale, and their progeny which closely resemble either of these varieties in type and season, are rated by all as being tender in bud. They include Augbert, Brackett, Early Elberta, Elberta, J. H. Hale, and Shipper's Late Red.

Laboratory freezing tests in West Virginia with 60 varieties showed that varietal differences in bud hardiness are less manifest in fall and early winter, when the buds are in the rest period, than in late winter and early spring when developmental changes have taken place.

While the more promising newer varieties possess both higher quality and greater hardiness, than Elberta or J. H. Hale too much reliance should not be placed on the performance of young trees, since older trees of any given variety are almost invariably less resistant. J. H. Hale was considered as being a hardy variety when it was first introduced, but when the trees became older, it was found to be at least as tender in bud as Elberta.

Professor Blake and others have called attention to the fact that the bud set—or number of fruit buds per lineal foot of annual twig growth at the tips of the branches—is important in connection with any figures concerning bud killing.

Cumberland sets ordinarily at least double the number of fruit buds as do Elberta, J. H. Hale, and similar varieties. If the same percent of buds are killed there are still many more good buds per foot on comparable twigs of Cumberland than on those of the latter varieties. But when the kill in per cent is heavier on Elberta and J. H. Hale than on Cumberland, as it commonly is, the difference is still more marked. The lower loss in per cent of the more numerous buds per foot on Cumberland should indicate a much heavier potential crop, everything else being equal. A tender variety, then, should set considerably more buds per foot, but most of them fail to do so. Besides J. H. Hale and Elberta, Augbert and Early Elberta have relatively low bud sets.

If, because of lack of vegetative vigor or on account of injury of some

type in the previous year, the lineal feet of wood possessing fruit buds was reduced with the tender varieties, and the hardier ones produced a large total of lineal growth the year previously, the difference in the crop harvested may reach astonishing proportions.

## Improving Hardiness By Breeding

Let us consider briefly the possibilities of improving the resistance of peach buds by breeding varieties hardier to cold than those on our present varietal list.

Men who are in a position to know assure us that this is possible and in fact that it is already achieved, to some extent at least. Assuming that a very hardy variety has been produced by breeding, are the problems of the peach grower simplified necessarily?

Anybody who has grown peaches knows that the public demands certain varieties without caring whether or not any individual grower or particular district can grow them to advantage. The highest quality and general desirability do not always enter into this demand. The new hardy variety whose existence we have assumed, will have to be accepted by the buyer and the consumer; if these people do not choose to approve this new peach, it will make absolutely no difference with its hardiness or other qualities may be in areas or districts where the varieties popular with the trade can be grown locally or shipped in.

In regions where peaches are not grown but in which the new hardier variety may succeed, unquestionably some degree of good would follow, whether or not it did win general acceptance in the present areas of peach production. But in extending the frontiers of peach growing, it would be somewhat harder, at least, to sell shipped-in peaches from other districts. Competition would probably be increased, and gluts and overproduction could conceivably become still more of a serious problem than they are now. Therefore, while hardier peaches are apparently a certainty, they may raise as many problems as they solve and the old doctrine of the survival of the fittest will still function perfectly.

## Peach Tree Management for Maximum Hardiness

As others have remarked, the peach tree, compared with our other deciduous fruit trees, is not a long-lived tree at best, nor is it especially vigorous and hardy, except under the most favorable conditions. It should be managed so that its vigor is maintained by any practical means. Applications of nitrogenous or any other necessary fertilizers, cover crops, proper renewal pruning, careful spraying to protect the foliage but with minimum spray injury, borer control, proper thinning of the fruit, and the like, all play their part. In brief, any cultural operation which tends to keep the trees vigorous without forcing the production of excessive wood will develop insofar as possible the rather limited capacity of the peach tree for resisting winter injury. As Pro-

fessor Blake puts it, "Trees extremely succulent or extremely 'hard' in growth are usually lacking in resistance to cold." With advancing age, it is more and more difficult to maintain vigor, hence the maximum degree of hardiness attainable declines also.

How your peach trees should be handled is not a part of this discussion: rather this is a function of your own University of Maryland authorities who are supplying you with such information adapted to your conditions.

Quite likely this discussion of winter injury to peach buds has not revealed anything that most of you did not know previously. However, it does reaffirm the assertions of others that the better peach grower has his trees nearly always in the best possible condition to resist winter injury and to overcome its ravages. Careless peach orchard management does not pay consistent dividends.

## DEVELOPMENT OF STORAGE SCAB IN APPLES

E. A. WALKER, Assistant Pathologist, University of Maryland,
College Park, Maryland

The storage of scabby apples, or the development of scab lesions on them while in storage, causes a distinct loss to the fruit grower. Scab lesions make it possible for other organisms to enter and rot the fruit. There is also an excessive loss of water from the fruit through these lesions. These losses are apparent whether the lesions are visible on the fruit when placed in storage, or develop after the fruit is kept in cold strage for three to five months. The development of scab on the fruit while held in storage is spoken of as storage scab.

Storage scab lesions are usually dark brown to black in color, and the organism seldom breaks through the surface of the fruit, while orchard scab spots on the fruit are olive green in color and usually break through the surface. Under storage conditions the fungus grows most rapidly in the over-ripened fruit, and is very noticeable in this fruit after six or more months in cold storage. The organism causing this type of scab grows on the dead tissue of the fruit and, therefore, is a saprophyte. Storage scale lesions may develop on any portion of the fruit, but they are more numerous on the stem half. In the orchard during the early season the apple scab appears most abundantly on the calyx end, and later in the season the lesions are more common on the stem and middle portion of the fruit.

The scab fungus continues to grow and increase in size in the fruit even at temperatures of 32° Fahrenheit, but is much more active at temperatures of 40-50°F. The smaller spots appear more active than the larger ones and spread to greater diameters. As these lesions continue to grow under cold storage conditions, the new fungus growth takes on the appearance and color of storage scab.

Various ideas are presented to explain the cause of storage scab. Some

growers believe that storage scab spreads to the healthy apples from the scabby fruit in the same container. Recent investigations disprove this contention, since healthy and scabby fruit have been stored together in the same basket, both wet and dry, without the development of storage scab being observed on the healthy fruit. Furthermore, healthy fruits that had been washed by various chemicals used in removing lead and arsenic residues, rinsed through two waters containing a suspension of scab spores and stored wet, have not developed storage scab at 32°F. even after a five-month's storage period. Fruits that are picked and held in the orchard several days, under wet or dry conditions, do not develop scab in storage.

The second consideration in regard to storage scab development is based on the idea that invisible scab spots are present on the fruit at the time it is placed in storage, and these enlarge to form the visible, sunken, black scab spots when the fruit is removed from storage some four months later. Recent research work shows this to be the more logical manner in explaining storage scab development. It has been shown that the apple scab fungus will grow on artificial media at 32°F. and increase to ten diameters in about 30 days. Experiments have shown that unsprayed fruits will develop more new storage scab lesions than sprayed fruit. Fruit that shows numerous lesions when stored will develop more new scab spots, even if it is taken from the same tree, whether it be sprayed or unsprayed.

The scab lesions in storage will enlarge more rapidly at 50°F. than at 32°F. and the number of new scab spots increases directly with the increased temperature. They appear much earlier at the higher temperatures. Increased humidity in the storage room has as great an effect on storage scab development as higher temperatures. Fruit stored at 70% relative humidity showed seven times greater enlargement at 40° than at 32°F., while that stored at 85% relative humidity and 32°F. showed about ten times more scab enlargement than those at 32°F. and held at 55% humidity. Thus a difference in relative humidity of 20% has a greater effect on the development of lesions than a difference of 8°F. in temperature.

Apple fruits are easily inoculated by ascopores of the scab fungus, but some difficulty is experienced in inoculating fruit on the tree with the conidia, or summer spores of the fungus. From a recent inoculating experiment it has been shown that young fruits will develop scab lesions readily if ideal moisture conditions are maintained for the growth and development of the scab fungus. The degree of success of inoculating fruits on the tree is dependent on the length of the wet period following. Maintaining the moisture around the inoculated fruit for a longer period of time results in the scab lesions appearing on the fruit in the orchard many days earlier in a normal growing season. The minimum wet period for succesful scab inoculation during the middle of August was found to be 40 hours. Increasing the wet period from 40 to 96 hours decreases

the number of days for scab lesions to show from 62 to 31 days, respectively.

Inoculations made about the first of September require over six days, while those made after the middle of September require eight days wet period following the inoculation in order to develop the scab lesions. The fruit is generally picked before these late season inoculations show evidence of scab in the orchard, but the scab will be detected later in the storage. Fruit that has been picked, and then inoculated with scab spores does not show scab lesions in storage. The sooner the scab lesions appear on the fruit after inoculation, the fewer will be the number of new lesions appearing in storage.

Fruits which have been covered with glassine bags from the time of flower cluster emergence until mid-to-late season, respond to inoculation experiment somewhat in the following manner. Green fruit inoculated on August 2, and kept wet for 47 hours will show many scab lesions in 23 days. Those inoculated on August 18 require a 92 hours wet period, while those inoculated on September 7 require at least a 108 hours wet period to develop scab, and those inoculated 7 days later require 144 hours to develop scab lesions. It is observed that a continuous moisture of 40 hours, or more, is essential for successful inoculation of the fruit with the conidia of the scab organism, and that more mature fruits require a longer wet period. A long wet, or rainy period in an orchard showing heavy scab infection on the leaves during the early fall, is an ideal situation to induce a heavy scab infection on the fruit in storage. Apple trees with heavy foliage hold moisture longer around the fruit and induce more scab development on the fruit, both on the tree and in storage than trees with lighter foliage, due to the shading effect.

It is evident that the orchard practices and management prior to picking and storing of the fruit have much to do with scab development in storage, as demonstrated by the above experiments.

In bad scab years it is advisable to apply a late Bordeaux Mixture (4-8-100) scab spray to the fruit about the middle of August to prevent scab development on the stored fruit. If bitter rot is a problem in the orchard, a Bordeaux application (6-10-100) or stronger should be used, and it will also serve in reducing storage scab.

## COMMITTEE REPORTS

Mr. Bryan called for the Committee reports which were given as follows:

*Auditing Committee*

Mr. A. H. Nofsinger reported that the Treasurer's books and records were in excellent condition.

*Nominating Committee.*

Mr. E. D. McCain offered the following nominations:

President—G. William Gardenhour, Smithsburg.

1st Vice-Pres.—Joseph G. Harrison, Berlin.

2nd Vice-Pres.—A. H. Nofsinger, Cockeysville.

Secretary-Treasurer—A. F. Vierheller, College Park.

*Executive Committee*

R. S. Dillon, Jr., Hancock
W. Lee Allen, Salisbury
Edmund P. Cohill III, Hancock
A. Lee Schrader, College Park
O. R. Higgins, Hurlock
G. S. L. Carpenter, Hagerstown
Lloyd Balderston, Colora
G. Rust Canby, Silver Spring
Dwight Walker, Mt. Airy

Representative to Maryland Farm Bureau, Inc. and Maryland Agricultural Society:

Henry C. Whiteford, Whiteford

Report accepted by unanimous vote.

*Resolutions Committee*

Mr. Fulton W. Allen offered these resolutions:

*Resolved*: That the Maryland State Horticultural Society hereby wishes to express its sincere appreciation of the work of our President, Mr. C. E. Bryan, in furthering the success of fruit growing in Maryland, both before and during his terms of office, and we express our regret that illness has prevented his attendance in our last day's session.

*Whereas*: The Maryland State Horticultural Society realizes the importance of the Japansee Beetle menace to the horticultural interests as well as to the general welfare of the people of Maryland,

*Be it resolved*: That this Society lend its cooperation and moral support to the program of the Maryland Department of Entomology as outlined by Dr. G. S. Langford at this meeting.

*Whereas*: Considerable interest has been expressed in the Eastern Apple Box or Crate, and

*Whereas*: It is desirable to standardize our fruit packages as far as possible.

*Be it resolved*: That this Society endorse the 1-1/5 bushel crate adopted by the New England organizations, and endorsed by the Middle Atlantic Fruit Growers' Conference at its recent meeting.

*Whereas*: We have enjoyed a generally successful meeting,

*Be it resolved*: That we hereby express our thanks and appreciation to the Secretary and Program Committee for this program; to the speakers who have given us the benefits of their research and experience; to the staffs of the Department of Horticulture, Experiment Station and Extension Service for their fine cooperation; to the Maryland State Fair Board for their assistance in making our Apple Show possible; to our commercial advertisers; and to the management of the Lord Baltimore Hotel and the Maryland Farm Bureau Federation officers for their efforts in making our meetings convenient and comfortable.

The Resolutions were adopted unanimously without discussion.

Upon motion of Mr. E. D. McCain, the Society voted that the Executive Committee seriously consider Frederick as the place of holding the Forty-first Annual Meeting in 1939.

The meeting adjourned.

# REPORT

OF THE

## THIRTY-FIRST ANNUAL MEETING

OF THE

# Maryland Crop Improvement Association

**Baltimore, Maryland**
**January 12-13, 1938**

AND OF THE

## STATE CORN AND GRAIN SHOW

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### PROGRAM

**Wednesday, January 12th**

9:30 to 12:00 Judging and Inspection of Corn and Grain Show.

1:30 Discussion—"SOIL EROSION AND ITS CONTROL"

1. Relation of the Cropping System to Soil Erosion—
   J. E. Metzger
2. Soil Erosion and Organic Matter—
   R. P. Thomas
3. The Maryland Soil Conservation Districts Law—O. C. Bruce
4. The Soil and Erosion Survey and Its Relation to the Erosion Control Plan—
   Boyd D. Gilbert
5. Farm Planning and Measures of Erosion Control—
   Grover Kinzy

### SOIL EROSION AND ITS CONTROL

The Winter Meetings of the Maryland Crop Improvement Association were devoted entirely to the topic of Soil Erosion and Its Control. This discussion and the work to which it relates should not be confused with the Soil Conservation and Domestic Allotment program in which there is reimbursement for the planting of certain crops, but it does relate definitely to farm-land management problems. The subject was discussed under five headings.

# RELATION OF THE CROPPING SYSTEM TO SOIL EROSION

By J. E. METZGER, Acting Director
University of Maryland Experiment Station

Farming in Maryland is more than three hundred years old. The agriculture of the State has evolved from the clearing of small patches in colonial days, to broad fields involving many acres at the present time. In the development of farms from wooded areas, and through the aid of improved machinery for farming and the good roads for transporting the product to the ever-developing nearby population centers, farming in Maryland has had a number of stages of development which materially effect the present situation. In the first place, the size of the farm has been greatly reduced, although the average size has fluctuated to a certain extent even in recent decades. In the second place, several cropping systems have been developed during the years, which have for their objective the changing economic situation both locally and on a wider scale. In the third place, the introduction of new crops and the availability of more effective machinery, have made their imprint upon the farming systems in general use in the State. Fourthly, the current methods for improving the farm plans and layout for not only reducing operating costs but better conserving the soil.

The nature of the land laws and the accompanying inheritance of land by Marylanders lent itself to the extensive division of colonial estates. At the present time the average size farm in Maryland is approximatly 98 acres. About 61 per cent of the farms of this State have a total area of less than 100 acres, and more than 84 per cent of all farms have an acreage of less than 175 acres. It should be further noted that 54 per cent of the total land area is in small farms which are operated by the owners. In general the farms of Maryland are of a non-commercial type, which lend themselves to a mode of family and neighborhood life. It is important that in any soil conservation program that these facts be recognized, and that the layout is so planned as to make it possible to produce for all of the needs of the family, and insofar as the climate will permit, the production of the various farm commodities. A typical Maryland farm produces crops first for home consumption, and secondly for the market, largely on the surplus basis. Even though only the surplus goes to the market, the total amount leaving the farm is infinitely more staple than is the flow of similar commodities from commercial areas. Usually two or more commodities go to the market from each farm. These are such items as fluid milk, poultry, swine, fruits and canning crops, but our farms are general farms in the broadest sense, in that a wide range of products are produced. Inasmuch as these farms are small it is necessary to provide a protective program for practically every acre. It is notable that the soil conservation program has given complete attention to this

factor. In many instances, areas that were formerly in pasture lands have been converted to crop land because they are more suitable for the purpose, and other areas have been converted to pastures in order to give certain sections of the farm protection.

It is not practical or desirable to attempt to supplant a cropping system which has developed through a long period of years, especially if such a system meets market conditions and lends itself to a perpetual agriculture. It is doubtful that any state or section has better developed cropping systems than Maryland. A crop production program at its best on a Maryland farm would mean the growing of most of the food for the family, all of the hay and silage needed, and about three-fourths of the feed grains required for the several classes of livestock. Even on well-managed dairy farms where the cropping program is properly adjusted, the purchase of nitrogenous concentrates is limited to about one-fourth of all the grain feeds utilized. The four or five year rotation has been the most practical for this program. It holds the row crop area to about 20 or 25 per cent of the total cropped land. It also makes it possible to have all of the land covered in the winter time, or if winter plowing is done, it will be on sod land and on portions of fields that are not easily eroded. This principle and practice of planting the row crop areas to a winter cereal grain may rightfully be regarded as the most important single measure in soil protection ever inaugurated or practiced in Maryland. Its use came about for purely economic reasons and it is highly probable that it will not be superceded by any other system unless it is economical to do so. In this type of cropping system it is necessary to use the fall planted feed grains rather than spring planted feed grains such as spring oats and spring barley.

It usually requires about a generation to affect a major change in the agriculture of a region. In the early stages of such a change losses may be sustained because of lack of complete information, but in general these difficulties are eliminated as individuals become more familiar with the practices required. Sometimes the introduction of a new crop may materially change the cropping system of a section. This has happened in many localities in Maryland through the introduction of certain canning crops and new cereal grains. Canning corn and tomatoes have largely replaced field corn. Winter barley has replaced much of the winter wheat and in part, some of the land that formerly was devoted to spring oats. In general these shifts in the farm program have not materially involved the major soil considerations, namely, soil fertility and soil conservation. The planting of winter barley is more effective than the planting of winter wheat in soil conservation because it produces heavier fall growth and gives better protection.

The premise of a rotation or cropping system has long been accepted as a means of controlling plant diseases, of conserving plant nutritional

substances, of stabilizing farm labor, and in general, of making it possible to establish the capital invested in implements, livestock, seed and fertilizers, in such manner as to make them assume a more or less fixed relation to the total farm area and total investment. This is highly desirable in an area of small farms and traditional production for use both in the home and for the market. The present increased interest in soil conservation adds still another factor to the list of benefits to be derived from an orderly, well-conceived crop production system. It is highly desirable in areas of mature topography, that is, on land that is too sloping to use fall-planted small grains, grasses or legumes as major items in the program. In addition, it is equally important that the other measures, such as contour farming, strip cropping, and dressing where practical, be used to further insure conserving the soil and all of the plant nutritional elements that it contains. In working out a stable program of soil conservation it is highly desirable to retain for the individual farm all of the practices that can be utilized profitably. It is not easy to brush aside traditional farm practices that have been three hundred years in the making. Neither is it probable that all of the widely established practices have been faulty. In fact, most of them have been developed gradually and usually for economic reasons. This is pre-eminently the case in crop rotation practices, and this is perhaps the chief reason why most of these practices should be retained in our farm program.

## THE SOIL AND EROSION SURVEY AND ITS RELATION TO THE EROSION CONTROL PLAN

By Boyd D. Gilbert
Soil Conservation Service, Ellicott City, Md.

In order that a sound policy of soil and water conservation may be adopted for a farm, it becomes essential that full knowledge of the soil resources and erosion conditions of the farm be obtained.

By erosion is meant the wearing away of soil by rain water or by the rapid melting of snow, or by winds. Erosion by washing is a serious erosion menace to Maryland soils. Blowing also becomes a menace on some of the soils of Southern Maryland, and even in upstate Maryland when the soils are left bare during protracted cold spells and are frozen dry.

Erosion by washing is of two common sorts—gully and sheet erosion.

A gully occurs where concentrating water cuts the soil so deeply that the cut cannot be filled by ordinary plowing or cultivating.

Sheet erosion is the washing away of a more or less uniform thin layer of soil over a wide area every time it rains hard. Sheet erosion is the more insidious type because it progresses for long periods of time without being noticed. Sheet erosion occurs in recently plowed

and harrowed fields on which wheat or other grain crops have not sufficient growth to cover the ground, and between rows of crops planted up and down slopes. When rainfall continues long enough to saturate the soil and begins to run off, or when the rainfall is torrential, excess water concentrates between rows, producing rills or small gullies, which are obliterated by the next cultivation. An acre of soil one inch deep weighs approximately 167 tons. It is conceivable that as much as 40 tons of soil can be washed off an acre of sidehill in the course of a heavy rain storm. It has been estimated that 400 to 1000 years are required to form an inch of soil material by decomposition of the parent rock. It is entirely possible for as much soil to be removed from a slope during a single rain storm as would require 200 years to form by natural processes. This seems to be a conservative estimate.

A soil is a mixture of mineral and organic material capable of sustaining plant life. A mere mass of decomposed rock does not constitute a soil. A soil is not capable of sustaining plant life without bacterial activity within its mass, and bacterial activity does not take place except in the presence of decaying vegetable matter.

When white men first came to Maryland they found a thick growth of timber, so thick that a squirrel could jump from tree to tree across the entire State. Under this, through thousands of years of natural processes, a soil was forming. Accumulated stores of decaying leaves and fallen trees formed a thick carpet of absorptive material which took up all ordinary rainfall, allowing the excess water to seep slowly away into the streams without doing material damage to the soil.

It became necessary to clear away the timber to provide land on which to grow food and fibre crops. Naturally the earliest settlers cleared the more level lands first. But rapid occupation of the new world led to exploitation of the farm land, and many of the steeper slopes were cleared and cultivated for short periods. The natural accumulation of organic substance in the soils rapidly disappeared with cultivation, and the soils took on a changed physical nature. They became less absorptive, rain water gathered and ran off more readily, and consequent accelerated erosion took place.

Early settlers found a market for tobacco in Europe. Tobacco was grown extensively for several years in central and southern Maryland, and during that time serious washing took place. Later, when tobacco was displaced by wheat, the process of erosion was halted to some extent. Again, about 25 years ago, an increased demand for cultivated food and cash crops resulted in clean cultivation of more land and consequent greater soil loss. It is probable that, in some parts of the state, more of destructive erosion has taken place in the last quarter century than in the century previous to that time.

All soils in Maryland have been formed from decomposing solid rocks except those of the Coastal Plain, which was raised up above the ocean

in comparatively recent time, so recent that the material has not yet solidified. A true soil is developed ordinarily in three layers, called horizons. Development has taken place slowly through many thousands of years of leaching from the surface downward. The upper layer, or "A" horizon, is the highly productive surface soil in which is considerable humus or decaying vegetable matter and in which bacteria are active. In its undisturbed state the surface layer varies in depth from a few inches on the steeper slopes to as much as twenty inches on the more level areas. This productive layer is loose and open in structure, is readily absorptive of moisture and is easily tilled. Many of the mineral constituents of the surface layer such as lime and iron, as well as some of the fine clay, have been washed out bodily or in solution and lodged in the second layer of the soil mass called the "B" horizon. This horizon is usually distinctively different from the "A" horizon in color, texture, and structure. It is lacking in organic matter, is more compact in structure, lighter in color, and contains a larger proportion of clay. It ranges in depth from a few inches to four feet or more. The third layer or "C" horizon is composed of decomposing rock fragments or the parent material of the soil. It has no organic content, is loose and open in structure and is usually of coarse texture. The qualities necessary to produce plant growth are almost entirely lacking.

The surface coloration of Maryland soils is distinctly brownish. With the exception of a few soils such as those known as Penn, Decatur, and Upshur, which occur in widely separated areas, red is not a common surface coloration. Red is, however, a common subsurface coloration. It is quite safe to assume, then, that where the cultivated fields show reddish slopes, much, if not all, of the natural topsoil has been washed off. In fact, it may be assumed that any field showing a variety of colors other than brownish has lost much of its natural topsoil.

The soil becomes less and less productive as more and more of the original topsoil is lost. Year by year the plow dips deeper into the subsoil. The change comes about almost unnoticed. Grass sod, crop residues, and manure are plowed under and some semblance of a soil is built up by incorporating organic matter in it. While the change in fertility may go unnoticed for many years, the change in physical characteristics of the soil cannot be denied. Such a soil is much more intractible and much more difficult to till than a new soil just recently taken up out of woods. Fertility has been kept up in most such soils by the application of increasing quantities of manure and commercial fertilizers. Improvement of varieties is another factor in increased yields of the common crops. We must not allow ourselves to become confused by that fact. Yields of crops have been maintained by the use of improved varieties, by better cropping and fertilizing practices, and by selection of the land where crops are grown, although

every sloping acre that is cultivated has been damaged in some degree by erosion.

Thousands of acres of Maryland soils have been made unfit for production of crops by gullying that prevents plowing and cultivating. On thousands of other acres, the two upper layers of soil have washed away; only infertile "C" horizon material remains.

The first step in the preparation of an erosion-control plan for any farm is to make a map. For this purpose aerial photographs are used if available, and if not, the plane table can be used. We do not claim to make an absolutely accurate map of any farm, but it is sufficiently accurate to serve all practical purposes.

On the maps are shown by symbols the important details of different degrees of slope, erosion, and types of soil. The kind and quantity of crops or other land cover are also indicated. The completed map shows the location of buildings, fences, civil boundaries, roads, streams, deep gullies, ditches, ponds and all other cultural details.

In order to determine the amount of erosion that may have taken place in any soil type, an effort is made to locate that type as it occurs in its natural state. In woodland that has not been subjected to accelerated erosion by destructive cutting, by fires, or by pasturing, can usually be found an undisturbed soil profile. The depth of the natural, undisturbed soil covering of wooded areas is then compared with the same soil type occurring on similar degrees of slopes in cultivated fields. The difference in depth represents the loss from the cultivated field by erosion, and this loss is indicated on the map by erosion classes.

The percentage of slopes is determined by means of an instrument which shows directly the number of feet rise per hundred feet. It has been estimated that the carrying power of water varies as the fifth power of the velocity, and this is taken into consideration in determining the erodibility of different slopes. That is, the power of water to erode would be about 380 percent greater on a 10 percent slope than on a 5 percent slope.

Difference in soil types is determined by examining the soil profile to a depth of three feet or more below the surface. Color, texture, structure, and location of a soil determines its type. Texture has a decided influence on erodibility, since coarser particles are not easily carried in suspension in water.

All that has here been mentioned is taken into consideration in preparing the soil and erosion map. When finished, it represents as nearly as possible a complete inventory of the farm's natural resources of soil and water. It indicates the necessary measures to be used to conserve soil and water.

# THE MARYLAND SOIL CONSERVATION DISTRICTS LAW

By O. C. Bruce
Soil Conservation Service, College Park, Md.

The Maryland Soil Conservation Districts Law (Laws of Maryland, 1937, Chapter 437) was enacted by the 1937 session of the Legislature.

The law is an enabling act, which permits farmers of the state to organize Soil Conservation Districts for the purpose of cooperating with the Local, State and Federal Governments and agencies thereof in controlling erosion on privately owned land. The need for State legislation in this field arises out of the fact that the problem of erosion cannot be adequately solved by work on individual farms in widely separated areas in the State. Without such legislation, which provides the machinery by which farmers can organize for cooperative action in applying erosion-control practices to their lands, the full benefits of the present State and Federal erosion control program cannot be realized. In a word, State legislation is needed to assure permanent results from the expenditure of State and Federal funds, as well as to provide a mechanism for cooperative erosion control action by farmers. As a consequence, section 3 of the Federal statute, approved April 27, 1935, authorized the Secretary of Agriculture to require the enactment of suitable State legislation as a condition to the expenditure of Federal funds for erosion-control operations in the State.

The soil is indispensable and a fundamental national resource. Today erosion on a large scale is endangering this basic asset. Some of the consequences of soil erosion as enumerated in the Maryland law, are:

1. Silting and sedimentation of stream channels, reservoirs, dams, and ditches;
2. Piling up of soil on lower slopes, and its deposit over alluvial plains;
3. Reduction in productivity or outright ruin of rich bottom lands by overwash of poor subsoil material, sand and gravel.
4. Deterioration of soil and its fertility, deterioration of crops grown thereon, and declining acre yields.
5. Loss of soil and water, which causes destruction of food and cover for wildlife;
6. Washing of soil into streams, which causes silting of spawning beds, and destroys water plants, thereby diminishing the food supply of fish;
7. Diminishing of the underground water reserve, which causes water shortages, intensifies periods of drought, and causes crop failures;

8. Increase in the speed and volume of rainfall run-off, which causes severe and increasing floods, which bring suffering, disease, and death;
9. Impoverishment of families attempting to farm eroding and eroded lands;
10. Damage to roads, highways, railways, farm buildings and other property from floods;
11. Losses in hydro-electric power, municipal water supply, irrigation developments, farming and grazing.

It is necessary that land-use practices contributing to soil wastage and soil erosion be discouraged and discontinued and proper soil conserving land-use practices be adopted and carried out if soil erosion is to be controlled and prevented. Among the corrective methods that may be adopted, the following are listed in the Maryland Law as being of primary importance:

1. Carrying on engineering operations such as the construction of terraces, terrace outlets, check dams, dikes, ditches and the like;
2. Utilizing strip cropping, lister furrowing, contour cultivating and contour furrowing;
3. Seeding and planting of waste, sloping, abandoned, or eroded lands to water-conserving and erosion-preventing plants, trees and grasses;
4. Forestation and reforestation, rotation of crops, and soil stabilization with trees, grasses, legumes, and other thick-growing, soil holding crops and retardation of run-off by increasing absorption of rainfall;
5. Retirement from cultivation of steep, highly erodible areas and areas now badly gullied or otherwise eroded.

The act provides a procedure by which soil conservation districts may be organized, such districts to be governmental subdivisions of the State, similar to drainage districts, etc. created by previous legislatures and limited to the exercise of two types of powers.

1. The power to assist farmers in the adoption and carrying out of appropriate measures and practices for conserving soil and soil resources.
2. The power to prescribe land-use regulations in the interest of the prevention and control of erosion, such regulations to be first submitted to local referendum and, if approved in the referendum, to have the force of law in the district.

The Act establishes a State soil conservation committee which has the power to define the boundaries of each district, to encourage the organization of districts, and the like. Each district is an independent unit, and is not subject to the control of the State committee.

It is necessary for the State committee to receive a petition from farmers of the State before steps can be taken to organize a district. A land occupier is defined as any person or corporation who holds title

to or is in possession of lands, either as owner, lessee, renter, tenant, or otherwise. The committee is required to hold a public hearing on the petition, to define the boundaries of the proposed district, and then submit the question as to whether the district should be created to all land occupiers living within the boundaries defined. The district cannot be established unless at least a majority of the votes cast is in favor of such creation.

Each district is to be governed by a Board of five Supervisors, two of whom are to be appointed by the State committee and three to be elected by the land occupiers of the district.

When organized, each district will have power to do research in erosion control; to conduct demonstrational projects; to carry out preventive and control measures; to enter into contracts with farmers and give them financial and other assistance; to buy lands for retirement and for project purposes; to make loans and gifts of equipment, machinery, seeds, etc., to farmers; to take over and operate State and Federal erosion-control projects; and to recommend land-use plans for soil conservation. These powers can be carried out upon private lands only with the consent of the owner.

In addition to the powers described, the supervisors of each district may formulate ordinances prescribing land-use regulations for soil conservation. Such land-use regulations cannot go into effect, however, until they have been submitted to a referendum of the land occupiers and have been approved in such referendum by at least a majority of votes cast. Should the referendum result in a majority vote in favor of the proposed land-use regulations, the supervisors may or may not determine that they are in the best interest of the district. If the vote is very close, the supervisors likely will not invoke the regulations. But if a large majority favors the regulations, they will doubtless be declared in force.

Once adopted, land-use regulations may be amended or repealed at any time, but only after such amendment or repeal has been submitted to a referendum that results in at least a majority of votes cast in favor of the amendment or repeal.

After a district has been in existence for five years, land occupiers may petition the State committee for discontinuance of the district. The question of discontinuance must be submitted to a referendum, after which the district will be dissolved unless a majority of votes cast are in favor of continuance. The committee shall not entertain petitions for discontinuance more often than once in five years.

Funds to finance the operations of districts will come from two sources:

1. The landowner and land operator who directly benefit from the application of erosion-control measures to their lands may bear a share of the expense, furnishing labor, materials, equipment, etc.

2. Society, as represented by the State and Federal Governments, may bear a share. Funds may be made available to the Districts through State agencies and allocated by the State soil conservation committee, and services, funds, and properties may be contributed by the United States through the Department of Agriculture or other agencies.

## MEASURES OF EROSION CONTROL AND FARM PLANNING

By Grover Kinzy
Soil Conservation Service, Ellicott City, Md.

Certain definite practices have been adopted for conserving soil and water. This paper describes several of these practices and how farm plans that include these practices are made for individual farms by members of the Soil Conservation Service and the farm owner or operator.

Terracing is often an efficient means of protecting land that must be cultivated. Terraces of various types have been used since biblical times in various parts of the world and in our own Southern States for nearly fifty years. There is a rough farm in Prince George's County, Md., parts of which have been completely terraced for about thirty years. The terraces of ancient times and even those constructed earlier in this country were very different from those now being built. The older terraces were narrow and steep-sided and had no definite plan of water disposal. Present-day terraces on cropland are so wide and smooth that they can be farmed along with the rest of the field, and they have definite outlets, either natural or prepared, so that run-off water may be safely carried away.

Today, terraces are built as broad ridges thrown up across the slopes of fields. These ridges intercept run-off water and carry it to outlet channels where it can do no damage as it goes directly down the slope. Modern terraces are spaced at intervals varied according to the slope, the soil type, and the amount of rainfall expected on the field on which they are used. The terrace ridge is so constructed that the terrace channel above the ridge is of such moderate grade that excess water will not flow with sufficient velocity to cause erosion.

For land too steep for complete terrace systems, modified terraces or diversion ditches are used in combination with strip cropping. Where such modified terraces are used, they are not cultivated but remain in sod with a generous sod strip above them.

Strip cropping is a simple practical method of soil and water conservation that is effective on moderate slopes and on soils that do not erode too easily. It consists, for example, of growing a shock-row of corn on the level or contour, and above and below the corn a strip of

hay, wheat or barley of about equal width. Planting and cultivating the crops on the level also makes small furrows and ridges that help to hold the water until it can soak in.

Terracing and strip cropping, used together, on the same field provide very effective erosion control if the strips are centered on the terraces so that during any one season half the space between the terraces is in a close-growing crop like hay or wheat and the other half is in cultivation. Using occasional terraces with strip cropping gives very satisfactory control under certain conditions. Alfalfa or other long-lived hay can be grown on and above the terraces, thereby leaving unobstructed, even-width strips for the rotated crops.

Good sod provides excellent protection to land, and good pasture is a very valuable farm crop. However, overgrazed, thin stands of grass on hillsides tend to become so stunted during hot, dry weather that they afford little soil protection. This condition can be greatly improved by diverting water from draws to the slopes. The water can be spread effectively by level terraces or by running contour furrows on the slopes.

The practices or erosion control measures already discussed may be roughly classified in two groups: vegetative and mechanical.

Vegetative control may be divided, in order of effectiveness, into control by forest growth, by grass growth, by close-growing crops and, indirectly, by increasing the organic matter.

It is evident to the most casual observer that woods, protected from fire and grazing, with its shade, leaves, twigs, limbs, roots and boles of the trees, protects soil and prevents erosion. Woodland areas that are burned over or grazed closely each year have little ground cover and offer little protection to the soil.

Grass anchors soil against erosion. Its decaying remains make the soil absorptive and its roots bind the soil in place. Its blades and stalks offer resistance to the flow of water; and slow-moving water does little damage. The finer legumes like alfalfa and the clovers, though not as efficient as a good sod, give satisfactory erosion control.

Thick, close-growing crops such as wheat, barley and rye are not as effective in resisting erosion as are grasses, but their numerous stems, roots and blades are fairly protective. They also have the advantage of remaining green and active throughout the winter.

Increasing the organic content of soils increases their capacity to absorb water, and the more water absorbed, the less remains to run off; therefore, increasing the organic content decreases erosion.

Preventing erosion by mechanical means is to prevent or decrease run-off by constructing physical barriers such as terraces or dams.

Terraces as used by the Soil Conservation Service may be classified as field terraces, diversion terraces, and pasture terraces. Each of these has already been discussed briefly.

Contour cultivation with its resultant ridges and furrows offers physical resistance to the run-off of water. The distance over which

contour cultivation will prevent erosion depends upon the degree and length of slope, the coarseness and porosity of the soil and, of course, upon the intensity of the rainfall. Our Service has found that on several Maryland soils where the slopes are very gradual, contour cultivation with a three-shovel cultivator will control run-off over a distance of about 100 feet; therefore in laying out contour strips for strip cropping, such areas are seldom made more than 100 feet wide.

Those in the Soil Conservation Service, who plan farming programs with the cooperating farmers are familiar with these practices and experienced in their use; consequently they are able to decide which erosion methods and practices will work to the best advantage on a certain field or farm. The practices used on a particular farm must be adapted to the type of farming suitable for that farm. The planner, therefore, must get from the owner information relative to type of farming, any contemplated changes, the principal sources of income, the kind and amount of livestock kept, the kind and amount of machinery and equipment available, the usual acreage of different crops grown, the rotation used, the amount of land in pasture and in woodland, as well as all other necessary facts.

With this information and a copy of the conservation survey map, which shows degree of erosion, slope, soil type and cover for each field, the planner inspects the farm, field by field. His plans, for example, may call for retirement of steep, badly eroded land to woodland, less steep and badly eroded areas to permanent pasture or long-lived hay, and protection of the more level areas with terraces and strip cropping. The final plans are designed to meet the need of the land and the desire of the owner insofar as physical and economic factors are concerned.

When inspecting a farm, the planner is usually accompanied by an engineer so that he may assist in developing the mechanical features of the farm plan. If a certain field or part of a field is to be retired to pasture and can be protected by diversion or pasture terraces or by contour furrows, lines for these control measures are located on the map with the aid of a hand level, and in some instances, stakes are set at once on the land to allow the farmer better to understand the proposed plans. If a field is to be terraced, the terrace lines and the terrace outlets are sketched on the map, and the same is done for contour strip crop areas. If there are gullies to be controlled or fences to be built or removed, these proposed sites are located, both on the land and on the map.

After the inspection has been made and the work map completed, the fields are numbered, the crop rotation planned, and the planned acreage is determined for the different crops, hay, pasture areas and woodland areas. Usually some adjustments are necessary in order to meet both the physical and economic conditions peculiar to an individual farm.

When the farm is completely planned for soil and water conservation, it represents the combined thought and judgment of the farmer and Soil Conservation Service technicians. The plan is made jointly with the farmer and the technicians of the Service; and if they are not able to prepare a plan that meets the farmer's needs and at the same time controls erosion in a satisfactory and practical manner, the farmer, of course, does not become a cooperator. It is not often that such plans cannot be worked out for most farms. Later adjustments or refinements are made by amending the original plan.

## REPORT OF THE SECRETARY-TREASURER FOR THE YEAR 1937

The State Corn and Grain Show held in the Lord Baltimore Hotel on January 12 and 13 favorably impressed both exhibitors and visitors. The assignment of a better location and more space in the hotel, represented a decided improvement over previous years. The general quality of exhibits was excellent. Due to the increase in premiums made available by the State Fair Board, and also to the preparatory plans made by the late F. W. Oldenburg, the show represented a considerable expansion over the preceding year. Compared to the previous show the number of exhibitors increased from 51 to 94 and the number of exhibits rose from 114 to 197. A portion of this increase resulted from the addition of senior classes in grain, and junior classes in corn, the latter being sponsored by the Maryland Farm Bureau.

Exhibits were entered from 15 of the State's 23 counties. In number of exhibits, Carroll was first with 20. Frederick and Washington tied for second place with 11 exhibits each. Harford, Baltimore, Wicomico, Queen Annes, Montgomery, Charles, Cecil, Kent, Dorchester, Caroline, Talbot and Worcester were the other contributors.

Following is the number of entries in each class, the number of prizes given, and the names of the first four winners.

### STATE CORN SHOW

#### Corn (10 Ear)

| | | |
|---|---|---|
| Class I Reids Yellow Dent | 23 entries | 15 prizes offered |
| Class II Golden Queen | 20 entries | 15 prizes offered |
| Class III Lancaster County Sure Crop | 11 entries | 10 prizes offered |
| Class IV Other Yellow Corn | 15 entries | 15 prizes offered |
| Class V White Cap | 4 entries | 7 prizes offered |
| Class VI Boone or Johnson County White | 13 entries | 10 prizes offered |
| Class VII Other White Corn | 4 entries | 5 prizes offered |

**Junior Classes—(4-H Club Members)**

| | | |
|---|---|---|
| Class VIII Yellow Dent | 10 entries | 9 prizes offered |
| Class IX White Dent | 4 entries | 4 prizes offered |

**Junior Classes—(Vocational Agr'l. Students and "Future Farmers")**

| | | |
|---|---|---|
| Class X Yellow Dent | 6 entries | 9 prizes offered |
| Class XI White Dent | | 4 prizes offered |

**Special Classes**

| | | |
|---|---|---|
| Class XII Single Ear | 31 entries | 5 prizes offered |
| Class XIII Maryland 30 Ear Seed Growers Display | 17 entries | 15 prizes offered |
| Class XIV Interstate Class | | 5 prizes and Trophy |

**Grain, Soybeans and Clover Seed**

| | | |
|---|---|---|
| Class XV Wheat | 17 entries | 10 prizes offered |
| Class XVI Barley (Smooth Awned) | 2 entries | 10 prizes offered |
| Class XVII Barley (Tennessee Winter) | 13 entries | 6 prizes offered |
| Class XVIII Rye | 4 entries | 5 prizes offered |
| Class XIX Soybeans | 1 entry | 10 prizes offered |
| Class XX Maryland Clover Seed | 2 entries | 5 prizes offered |

This makes a total of 197 entries as compared to 114 entries last year.

T. Wilson Galbreath, of Street, was named winner of the Maryland trophy for the best ten ear exhibit of corn and Grand Sweepstakes winner this year in the annual Maryland Corn Show held in Baltimore during the meetings of the Farm Bureau Federation. The trophy, a silver water pitcher, was presented by The Southern States' Cooperative.

Others who were awarded places in the contest were as follows:

Class One—Reids Yellow Dent—First, T. Wilson Galbreath, Street; second, T. E. Zimmerman, Frederick; third, C. M. Zimmerman, Frederick; fourth, D. E. Zimmerman, Frederick.

Class Two—Golden Queen—First, John E. Grove, Westminster; second, Mrs. Granville Arbaugh, Westminster; third, Granville Arbaugh, Westminster; fourth, Eleanor Galt, Westminster.

Class Three—Lancaster County Sure Crop—First, Walter Warehime, Westminster; second, Eleanor Galt, Westminster; third, Mrs. Walter Warehime, Westminster; fourth, Ida Warehime, Westminster.

Class Four—Other Yellow Corn—First, Richard R. Holter, Jefferson; second, C. K. Holter, Jr., Jefferson; third, Louise Burtner, Keedyville; fourth Clark Crawford, Keedysville.

Class Five—White Cap—First, Howard Burtner, Keedysville; second, Edwin Burtner, Keedysville; third, Millor K. Ward, Jarrettsville; fourth,

Charles E. Flemming, Woodbine.

Class Six—Boone or Johnson County White—First, D. E. Zimmerman, Frederick; second, T. E. Zimmerman, Frederick; third, C. M. Zimmerman, Frederick; fourth, John W. Milburn, Elkton.

Class Seven—Other White Corn—First, LeRoy Burtner, Sharpsburg; second, Matt Harding, Cambridge; third, Dorsey Harding, Cambridge; fourth, Ernest Mitchell, Willards.

Class Eight—4-H Club Members (Yellow Dent Corn)—First, Stephen Morelock, Westminster; second, William Tarbert, Glencoe; third, Roger Burtner, Keedysville; fourth, T. Clay Groton, Jr., Glencoe.

Class Nine—4-H Club Members (White Dent Corn)—First, Waldon Burtner, Boonsboro; second, Walter Richetts, Jr., Barnesville; third, Roger Burtner, Keedysville; fourth, Thomas Seibel, Sandy Spring.

Class Ten—Vocational Agricultural Students and Future Farmers of America (Yellow Dent Corn)—First, William J. Hines, Jr., Brinklow; second, Marion Burton, Sudlersville; third, Stanley Everett, Sudlersville; fourth, John Ware, Jr., Sudlersville.

Class Twelve—Single Ear Class—First, T. E. Zimmerman, Frederick; second, R. E. Zimmerman, Frederick; third, D. E. Zimmerman, Frederick; fourth, Granville Arbaugh, Westminster.

Class Thirteen—Maryland 30 Ear Seed Growers Display—First, T. E. Zimmerman, Frederick; second, R. E. Zimmerman, Frederick; third, T. Wilson Galbreath, Street; fourth, Mrs. Walter Warehime, Westminster.

Class Fourteen—Interstate Class—First, T. Wilson Galbreath, Street; second, John Edward Grove, Westminster; third, D. E. Zimmerman, Frederick; fourth, Walter Warehime, Westminster.

Class Fifteen—Wheat—First, W. S. Stowell, Centerville; second, Wilson Heaps, Pylesville; third, Jacob Burtner, Boonsboro; fourth, Harry Miller, Havre de Grace.

Class Sixteen—Barley (Smooth Awned)—First, Edwin Warfield, Jr., Woodbine; second, W. S. Stowell, Centerville.

Class Seventeen—Barley (Tennessee Winter)—First, James Galbreath, Street; second, D. E. Zimmerman, Frederick; third, C. M. Zimmerman, Frederick; fourth, R. E. Zimmerman, Frederick.

Class Eighteen—Rye—First, Howard Burtner, Keedysville; second, Jacob Burtner, Boonsboro; third, S. E. Burtner, Boonsboro; fourth, R. W. Burtner, Sharpsburg.

Class Nineteen—Soybeans—First, Wm. L. Stoltzfus, Pocomoke City.

Class Twenty—Maryland Clover Seed—First, O. W. Burtner, Sharpsburg; second, Walter Warehime, Westminster.

The exhibits were judged by Mr. C. E. Phillips of the University of Delaware and Mr. Geary F. Eppley of the University of Maryland.

At the business session at the close of the meeting on Wednesday,

the following officers were elected for the ensuing year:

President—Fred C. Jones, Darlington, Maryland.
Vice-President—T. A. Mann, Granite, Maryland.
Secretary-Treasurer—*F. W. Oldenburg, College Park, Maryland.
Acting Secretary-Treasurer—John W. Magruder, College Park, Md.
Farm Bureau Representative—Lawrence E. Ensor, Sparks, Maryland.

* Deceased January 22, 1938.

## TREASURER'S REPORT

### Maryland Crop Improvement Association
### January 1, 1937 to December 31, 1937

| | |
|---|---|
| Balance in Bank—January 1, 1937 | $ 62.64 |
| **Receipts** | |
| Appropriation from Agricultural Society | 176.50 |
| Dues paid by members (1937) | 11.00 |
| Dues taken out of awards | 28.00 |
| Total | $ 278.14 |
| **Expenditures** | |
| Maryland Farm Bureau Dues | $ 20.00 |
| Trophy | 17.00 |
| Awards | 109.00 |
| W. R. Ballard, awards for Potato Show | 36.00 |
| Postage, circulars and letters | 8.28 |
| Dues taken out of awards | 28.00 |
| Total Expenditures | $ 218.28 |
| Cash in Bank (Dec. 31, 1937) | 59.86 |
| Total | $ 278.14 |
| Brought Forward— | |
| Balance in Bank—January 1, 1938 | $ 59.86 |

Baltimore, Maryland, January, 1938.

We, the undersigned, have examined the books of the Treasurer of the Maryland Crop Improvement Association and have found them to be correct.

Auditing Committee,

H. M. CARROLL.

# SOIL EROSION AND ORGANIC MATTER

By R. P. THOMAS
University of Maryland

It has been pointed out that the majority of you have purposely or unconsciously limited erosion of your soils by the use of suitable vegetative coverage. This has been a very wise and profitable practice for you. There are, however, some phases of soil losses which you have unfortunately neglected. Your soils are no longer the rich, loamy, humus filled and granular structured soils that your forefathers found here more than two centuries ago. The soils were then deep and contained large amounts of humus or organic matter. A large part of the rain which fell upon them was absorbed by it. The water went into the soil and not off of it as it generally does today. The streams were clear, not muddy as one sees them today. The productivity or fertility of your soils at that time was high. With very little preparation of a seed bed, crude cultivation, no fertilizer, poor quality of seed, unadapted varieties and strains, your ancestors produced better crops with less trouble than you are experiencing. All of this was possible because nature had prepared a wonderful soil for the early settlers to farm. In all probability all of you would be proud to have such a soil to farm under the present conditions. If you did have such soil many of our soil problems as well as a large number of our other farm troubles would automatically disappear. Today many of you see either the rain water run off your land very much as it would off of a duck's back or pass thru the soil as water does through a sieve. One of the chief causes for this loss of soil water and the plant food that is dissolved in it, is the low amount of organic matter present in the soils of today.

Since all of you would like to have rich, productive soils, let us speculate on how these early soils were formed. In all probability these soils resulted from several centuries of favorable constructive factors. The rocks or materials from which these soils were formed were gradually broken down by the many agents of weathering. As the mineral fractions became fine and deep enough, small plants and animals appeared and lived in and on the surface of these mineral substances. These living things died and their remains were incorporated with the soil material. In time the plant and animal remains were added to the soil at a greater rate than they were destroyed or decomposed. A gradual increase of organic matter in and on the surface of the soil has resulted. A continuous breaking down of the mineral fraction has also accompanied the accumulation of organic matter. This deep layer of mineral and organic materials gave us a fertile soil of great depth. The mineral fractions were coated with and held apart by the organic

matter. This gave the soil its open and granular structure. Since organic matter or humus resembles a sponge in its ability to absorb and hold water, very little of the rain water had a chance to run off. It ran down into the soil, producing a larger water reservoir which supplied the growing plants with water during the dry periods.

Soil organic matter or humus has other very important functions in the soil besides retaining water and improving the structure. Its sponge-like nature is also a great aid in retaining and holding bases and soluble plant food from being lost from the soil by leaching. You are probably familiar with the straining or filtering of milk through a filtering pad in order to remove any foreign material or dirt. This pad retains or holds back these materials by having the passageways too small for the dirt to pass thru and by the attraction between the filtering pad and the dirt. In very much the same manner the very fine portion of the soil, both the humus and mineral matter, catch the bases and plant food as it passes by them. The materials retained by the soil in this manner are for the most part, considered available to the growing plants.

When water passes thru a soil it is only natural for it to dissolve the substances which are soluble in it. If these dissolved substances are not removed from the soil water as it passes through the soil they will be carried away in the drainage water. Since all plant food must be brought into solution before it can be taken into the plant, it is very desirable to have either a large amount of soluble food present in the soil or held there by the fine materials or soil colloids. If it all existed in the soil solution a large part of it would probably be lost by leaching. On the other hand, if it is held by the soil colloids very little is lost by leaching and a large portion of it is available for the use of the growing crop. Thus for a productive soil or for the growing of a good crop, it is desirable to have the plant food held in an available form attached to the colloidal material and not in solution where it is likely to be lost by leaching.

The colloidal material of the soil is made up of the very fine mineral and organic materials. Since the soil colloids are the conservers of the available plant food it behooves the farmer to increase or maintain the colloidal portion of his soil. This can be done by either increasing the mineral or humus colloidal content of the soil. As the mineral colloids are the result of many years of soil weathering the possibility of increasing this portion of the soil economically is very slight. This leaves only one way of building up the reserve holding capacity of a soil and that is thru increasing its organic matter content. Nature used this method in preparing the fertile soil for your forefathers. If the present day tiller of the soil wishes to conserve or raise the fertility level of his soil, he will have to help nature increase the organic portion of his soil.

Many of the soils in Maryland, especially the sandier soils, are unable to hold in an available form enough plant food to grow a profitable crop. For special crops some farmers have surmounted this difficulty by applying fertilizer two or three times to a single crop. While this practice is profitable with certain crops it will not meet all the requirements of or take the place of the fine material. The continuation of such a practice without increasing the colloid content of the soil will tend to destroy the organic matter already present and make the split application of fertilizer an absolute necessity. The use of fertilizer in this manner is not efficient because much of it does not reach the plant roots and the soluble part of the fertilizer is apt to pass beyond the reach of the roots before all of it is consumed. The cost of applying a fertilizer twice should also be considered. The sandy soils are not alone in the need of organic matter to increase their plant food retention capacity. Some recent studies have shown that even our finer textured soils in the Piedmont section of Maryland have lost since being brought under cultivation from 50-75 per cent of their exchange capacity or holding power for plant food.

For simplicity it may be said that the destruction of organic matter in soil is a good thing unless carried to extremes. It is necessary that the organic residues of crops and animals be at least partially decomposed. If this did not take place the soils would soon cease to exist. In its place would be a layer of plant and animal remains which would limit or prevent crop growth. Nature has prevented such undesirable conditions by giving us a large number of various kinds of microorganisms. Each group of these microorganisms or very small plants and animals destroy certain portions of the plant and animal residues by using them as food. If the proper conditions of temperature, moisture, air, and food are present, these organisms will finally completely destroy or consume the organic residues. This leaves no organic material present in the soil. Cultivation has a tendency to bring about more favorable conditions for the destruction of the organic matter in the soil. Thus the plowing of the virgin land stopped the accumulation of organic matter in a soil and at the same time increased the activity of the organisms which destroy soil organic matter. This has left us with a soil which is no longer able to absorb water or retain the plant food as formerly.

In order to restore to our soils this desirable property of base and plant food retention it is necessary to increase their organic matter. This can be accomplished only by adding more plant and animal residues to the soil. Just the addition of more organic residues will not be sufficient in itself. Care must be exercised in selecting the kind of materials to turn under. A definite program should be adopted. Some crops will never adapt themselves to the formation of humus. Some crops are ideal for preventing the loss of soluble plant food when the

regular crop is not growing but really add little organic matter. A splendid example of this is rye. This crop is used widely as a green manuring and cover crop between other crops. It does prevent the loss of considerable plant food by changing it into vegetable matter. However, when green rye is turned under the decomposition is usually rapid and complete. Under such conditions very little organic matter or organic colloids are added to the soil. There is also the possibility that the turning under of rye may stimulate the growth of the micro-organisms to such a point that they will attack the organic matter already present in the soil, and destroy some of it. Do not conclude from this example that rye should not be used, as it does serve a valuable purpose. However, you should remember that the use of rye will not normally increase or even maintain the retentive power of the soil.

No definite rule can be laid down to follow in the selection of crops to turn under to increase the organic colloids in a soil. As nature regulates the moisture and temperature, two of the important factors in the decomposition of organic materials, it is difficult to estimate the rate of decomposition of many crops. Normally the more succulent (rapid growing and high water content) the crop, the more quickly and completely it decomposes. Likewise the woody type of vegetation decays more slowly and less completely. The ideal crop would be one that supplies enough rapidly decomposing material to produce a favorable soil condition for the liberation of plant food; and also considerable woody material that disintegrates slowly and does not stimulate the class of microorganisms which would compete strongly with the growing crop for plant food. Although it has never been proven this is probably what happens when a soil is abandoned for a few years or rested as is practiced by the tobacco growers. Under such conditions nature generally uses several different kinds and types of crops. Often times man can aid considerably by supplying the needed lime and fertilizer for the production of crops that will supply a larger or more effective reserve or organic collodial materials.

In this brief discussion some of the functions and methods of building up the organic colloid content of soils are mentioned. The finely divided organic matter in the soil coats the mineral particles and holds them apart to permit the entrance of the rainwater. These same organic particles are very active in holding the plant food in an available form in the soil. In many of our Maryland soils the organic matter makes up a very large portion of the collodial fraction. This is especially true for the coarser textured soils. Even the organic colloid content in some of these sandy soils is so small that the ability of the soil to retain the plant food applied in fertilizers is limited. There are very few soils in this state which have not been reduced considerably in their fertility thru the loss of organic matter which has decreased the

ability of the soil to retain plant food. This valuable property of the soil can be restored by a careful and systematic method of adding organic matter. Each farm and often each field, presents a specific problem for the most economical and practical way of building up the organic complex. Often times nature is suggesting the most suitable crops and conditions if we will only cooperate with her.

REPORT

of the

# 29th Annual Meeting

of the

# Maryland State Beekeepers' Association

**Francis Scott Key Hotel, Frederick, Maryland**

**January 15, 1938**

The 29th Annual Meeting of the Maryland State Beekeepers' Association was held in Frederick with an attendance of approximately 100. This was the first annual meeting ever held in Frederick County and the first time in years that an annual meeting has been held during the day. Beekeepers from Washington, Frederick, Montgomery, Prince George's, Carroll, Howard, Baltimore, Harford, Queen Anne's, and Caroline Counties were in attendance.

The meeting started with a luncheon at 1.00 P. M. in the Banquet Room of the Francis Scott Key Hotel, Dr. Ernest N. Cory acting as Toastmaster. The Honorable L. C. Culler, Mayor of Frederick, welromed the beekeepers to the town and a few words were also tendered by H. R. Shoemaker, County Agent of Frederick County.

Dr. Ernest N. Cory presented the Secretary-Treasurer's report which was approved by the Auditing Committee.

Following this, a very significant talk was given by W. E. Braithwaite of the Division of Simplified Practices, National Bureau of Standards, entitled "Simplification of Honey Containers and its Relationship to Increased Consumption."

Following Dr. Braithwaite's talk, Norris James, one of Maryland's outstanding comb honey producers, gave a most interesting discussion of his methods of comb honey production, using model hives and supers to demonstrate the important features of the system.

Dr. Cory then called upon three nationally known figures in bee culture, Maurice Dadante of the famous Dadante family, A. D. Hiett of the G. B. Lewis Company and James I. Hamilton, Director of the U. S. Bee Culture Laboratory. These gentlemen responded with pertinent remarks relative to national trends and conditions in bee culture. It was generally

agreed that the Maryland beekeepers were fortunate in being able to meet these men personally and witness their valued remarks.

At this point, Edwin J. Anderson, State Apiarist of Pennsylvania, was called upon and responded with a very interesting talk entitled "Variations and Seasonal Management." Following Mr. Anderson's talk, the Frederick County President, Grayson Domer of Thurmont, and the Secretary-Treasurer, Robert McCutcheon of Braddock Heights, were called on for a few remarks.

Dr. Cory, State Entomologist, then discussed the pollination aspects of the beekeeping industry in a splendid talk entitled "The Value of Insect Pollination." Considerable discussion followed this talk.

The program continued with the results of the judging of the First Annual Winter Show being made known. Dr. C. E. Burnside, Apiculturist, U. S. Bee Culture Laboratory, who judged the entries, announced the following winners: E. A. Andrews, Jr., Govans—high point winner; F. D. Covell, Frederick—runner-up; L. B. Shearman, Glen Arm, and Bryan Darby, Hyattstown—tied for third; Harold L. Kelly, Forest Glen, N. W. James, Baldwin, James Marsh, Hyattsville, C. A. M. Houck, Clear Spring, and Howard Coale, Bel Air, also took prizes. Checks, at this point, were handed over to the prize winners. The money was made available by a sum set aside by the State Fair Board for the purpose.

Following this presentation, the following officers were elected for 1938: Harold L. Kelly, Forest Glen, President; George J. Abrams, College Park, Secretary-Treasurer; Dr. Ernest N. Cory, College Park, Director to the Maryland Farm Bureau; Dr. J. R. Abercrombie, Baltimore, Delegate to the Maryland Farm Bureau.

The meeting adjourned at 4.10 P. M. and the group repaired to the Lobby to inspect the group of exhibits which completely filled all available space. Outstanding among the exhibits was the International Honey Exhibit arranged by the U. S. Bureau of Chemistry and Soils which featured samples of honey from 53 different countries. A container exhibit arranged by the National Bureau of Standards under the directions of W. E. Braithwaite, attracted considerable attention as did the beekeepers' supply exhibit arranged by the G. B. Lewis Company, Lynchburg, Virginia. Two exhibits arranged by the University of Maryland Extension Service, one showing the evolution of the hive and the other, a Maryland commercial pack exhibit, carried educational messages of value to the beekeeper.

It was generally agreed by those attending that the 29th Annual Meeting of the Maryland State Beekeepers' Association was by far the outstanding meeting ever held by the group.

# Annual Report of Extension Activities in Bee Culture for 1937

By GEORGE J. ABRAMS
Specialist in Apiculture

University of Maryland Extension Service

## Educational Work with the Beekeepers

Success in this work was accomplished by attacking the problem of educating the beekeeper on four fronts. Through personal visits, beginners' schools, literature, and beekeepers' association meetings, the story of modern successful bee culture was told.

### Personal Visits

As has been pointed out in previous reports of work in Extension Apiculture, there is no better way of teaching colony and apiary management than by actually working with the beekeeper in his own apiary. In his own bee yard, the beekeeper's interest is keenest and his particular problems uppermost in his mind. At meetings he often forgets some of the questions he wanted to ask. In his own yard, these problems are before him and from the standpoint of the Extension worker, the teaching materials are immediately available. In recognition of these facts, the Extension worker made ninety-four (94) personal visits to beekeepers. New personal contacts were made with twenty-five (25) beekeepers, many of whom had never heard of beekeeping extension work, and all of whom had not previously received aid from the service.

### Beginners' School

The outstanding success of the first Beginners' School in Bee Culture held during the spring of 1936 indicated clearly the possibilities in reaching the beekeepers with an educational program using the County School as the vehicle. Accordingly, schools were held in Washington, Frederick and Montgomrey Counties during the spring of 1937.

The beekeepers in a County were asked to pick the night most convenient for them. This was done by questionnaires. The night suiting the largest number was selected as school night. Letters were sent to all the others telling them why their night was not selected and urging them to bend every effort to attend anyway.

These schools ran concurrently, Tuesday nights in Hagerstown, Wednesday nights in Frederick, and Friday nights in Rockville for 10 weeks.

The following subjects were covered:

*General Facts about Insects*

- Structure of insects
- How they eat, breathe, etc.
- Life history and type of development
- Sense organs
- Comparison of bees with other insects

*Life History of the Individual Bee*

Origin of the eggs and how they are fertilized
How drones are produced (parthenogenesis)
How queens and workers are produced from same kind of egg
Feeding the larvae (origin of larval food, etc.)
Developmental stages of the three casts
Duties and activities of the queen and drones
Duties and activities of the worker
Guarding, cleaning, ventilating
Feeding the brood, queen, and drones
Building the combs
Division of labor in collecting pollen and nectar
Ripening nectar and storing honey
Cause of death of three casts

*The Yearly Cycle in the Honeybee Colony*

How honeybees survive the winter
Spring build up (stimulus for brood rearing, brood cycle for the year, etc.)
Swarming—(its causes, preparation for, behavior of swarms)
The parent colony—(mating of queen and subsequent activities)

*Evolution of Bee Culture*

Original methods
Revolutionary inventions and practices (invention of movable frame hive, extractor, foundation, introduction of Italians)

*Selecting an Apiary Site and Equipment*

*Fundamentals of Colony Management*

Preparation for winter
Spring management
Swarm prevention and control
Extracted honey production
Comb honey production
Requeening

*Disease and Pests*

*Honey—What it is*

American honey regions
Maryland sources
Poisonous honeys
Uses of honey

The total enrollment at the Hagerstown School was thirty-six (36); Frederick, thirty-one (31); Rockville, twenty-five (25). The Hagerstown and Frederick Schools gained in enrollment as the Schools progressed. The Rockville School lost. The loss was attributed by those

attending to the night of the week. It was pointed out that Friday night in an urban area offers many other diversions.

The splendid reception and support given these Bee Culture Schools have assured their inclusion as a fixture in the Extension work in bee culture in Maryland and should indicate the possibilities for educational work with other commodity groups.

**Association Meetings**

Six (6) regular meetings of the Maryland State Beekeepers' Association were held during the year at which time educational talks and demonstrations were given either by the Extension worker or by outstanding bee men connected with the U.S.D.A. or other institutions.

The talks at these meetings were of a more advanced nature than the beginners' talks.

**The Pollen Basket**

Through a mimeographed publication called "The Pollen Basket" considerable educational information about bee culture was disseminated. This sheet started its third year in 1937. It is well liked and read, as indicated by letters received commending it, and by frequent references to it at beekeepers' meetings, and in personal talks with beekeepers. A number of the beekeepers are keeping copies on file for reference.

"The Pollen Basket" has a threefold purpose. First, as a mouth piece through which material of an educational nature can be broadcast by the Extension worker. Second, as a medium through which will be fostered among the State beekeepers a feeling of unity, common purpose, and fraternity, and third as a practical method of sending out notices of meetings and other events of interest to beekeepers.

**Problems Given Special Attention**

The backbone of succsesful bee culture is *colony and apiary management*, which includes the big three fundamentals; good wintering, proper spring increase and control of swarming. A colony that winters so as to survive until spring with a minimum loss during the winter of individual bees and bee energy; that then increases in size by egg laying so that it reaches its peak in number of field bees at the time the major honey flows are available and that can be dissuaded then, from weakening itself by swarming when this peak is reached will be a surplus honey producer. These three steps are the rock bottom fundamentals of honey production. Only colonies that can be so managed are profitable. A failure in any one of these three steps results in failure. This combined problem, therefore, containing as it does, the whole of bee behavior, colony reactions and intelligent manipulations of equipment, was given the greatest attention.

The ignorance of the average beekeeper of the tie-up between these three fundamentals can only be appreciated by one who has been intimately associated with bee culture in the State. In a large number of

apiaries, the extent of swarming and the number of swarms caught is actually looked upon as the index of success, the reason being that years ago when half the colonies were killed in the fall to remove the honey crop it was necessary to have double the spring count (by catching swarms) in the fall, to maintain the original number of colonies in the apiary. Those were the days when an average of 15 to 20 pounds of honey per colony was considered good.

The yearly winter loss in colonies actually killed outright in Maryland is estimated over a period of years at about 12%. The winter of 1935-36 was exceptionally severe on overwintering bees and the loss is estimated to have been about 40% of all colonies in the State for this period which means that approximately 12,000 colonies died, causing a monetary loss of not less than $40,000. This does not include the value of honey lost, which would, in a normal year amount to approximately $36,000. These figures should give added weight to the old statement well known in apicultural circles that winter loss annually accounts for the death of more colonies than all other adverse factors combined, including disease. The 1936-37 winter losses were less severe than those of the previous winter.

The period of spring build up in colony population is an extremely crucial period in the yearly cycle of the colony. Too rapid a build-up may result in a tendency to swarm before the coming of the major honey flow, a condition which is difficult to control. Too slow a spring strengthening of the colony population results in a colony not having enough field bees in readiness to collect available nectar when the honey flow begins. The importance of these rather technical differences is not imaginary. Colony population is based very definitely upon the strength of the field force at the time nectar is being secreted by nearby honey plants.

With these facts clearly in mind, it was the major aim of the Extension worker to teach as much bee and colony behavior as possible; to recommend the best hive equipment and ground the beekeeper in the methods of equipment manipulation found best under Maryland conditions.

The campaign to *eliminate the antiquated and unprofitable box hive* is slowly taking effect, as a large number of colonies in the State are being equipped with movable frames for the home-made boxes or have been transferred to new movable frame equipment.

*The two-story hive* was recommended in all cases and it is gratifying that the number of beekeepers who are at least trying out this plan with a portion of their colonies are nearly 100% of the beekeepers visited or met at meetings. The superiority of the two-story arrangement is so marked that a fair trial will convince most of the men of the desirability of extending this feature of management to all of the colonies in the spring.

Generally *poor stock* is one of the most serious drawbacks to Maryland bee culture. Bees from poor stock are difficult to manage, sting ex-

cessively, are at least very difficult to keep from swarming, do not winter well and are generally more susceptible to invasions of wax moths and European foulbrood infection. Colonies headed by old queens do not build up properly in the spring and the queens are often superseded at a crucial time in the spring build-up period, resulting in a cessation of egg laying and adult emergence at a time when it can be ill afforded.

As first planned, the campaign for the improvement of stock and biennial requeening called for a liberal requeening of apiaries by the Extension worker himself, using queens purchased by the beekeeper. It was soon noted, when requests for this service began to come in, that this system would soon get entirely out of hand and if practiced would consume all of the Extension worker's time. To meet this condition, it was necessary to agree to requeen only several colonies in an apiary, to demonstrate how it should be done and then leave it to the beekeeper to finish the job. Three reasons dictated this change of procedure. First, the number of requests for requeening; second, the length of time required to requeen a colony; and third, a feeling of financial responsibility directed at the Extension worker by the beekeeper when introduced queens were not accepted or were soon superseded, a situation commonly experienced under normal conditions.

It is felt that the requeening campaign led to one of the outstanding trends in Maryland beekeeping for the year, as witnessed by the facts that Maryland's only commercial queen breeder could not begin to fill his orders; the several beekeepers acting as agents for southern queen breeders did their best year's business and starting in 1938, a number of experienced bee men qualified to do so, are anticipating going into the queen rearing business as part of their beekeeping activity.

*The value of keeping accurate records and accounts,* something seldom practiced by beekeepers was given considerable attention. Mimeographed schedules were made available again this year and an increased number of beekeepers put them to use. It is felt that it will be only a matter of time and constant stimulation until the majority of beekeepers will be using these sheets. They all agree that they should keep books. The simplicity of the prepared record sheets will make it easy.

*Education in the diagnosis and control of bee diseases* was given major attention at all times. Talks of an educational nature were given at beekeepers meetings where diseased combs were displayed and both macroscopic and microscopic examinations were made. In the apiary the disease problem was usually discussed and detailed description of eradication procedure was given. Statistics regarding inspections are given elsewhere in this report.

The Maryland *infestation of the Bee Louse, Braula coeca,* was further studied this year primarily to chart its distribution and extent. Infested apiaries were found located as far west in the state as Hagerstown. The area now included in the infested area includes the following Counties: Montgomery, Frederick, Washington, Carroll, and Baltimore Counties.

The problem of properly *packing and marketing* the honey crop was given the usual attention. At all times the beekeepers were urged to adhere to the U.S.D.A. standards and grades for honey. Considerable time on each visit was spent in instructing the beekeeper in the best methods of handling comb honey, little stress being given to the market preparation of extracted honey as there are not many ways in which the beekeeper can go wrong in getting liquid honey ready for sale. Furthermore, most bee men who produced extracted are experienced enough to understand the rather simple procedure and are aware of the several dangers to be avoided, such as over heating and fermentation. These extracted honey producers were urged through literature and personal talks to investigate the possibilities for the sale of "Honey Butter" a little used form of honey, but one which the Extension worker has found to hold very bright possibilities.

The comb honey producers on the other hand, were urged to use the "Carbolic Cloth" method of honey removal from the hive, for quickness, to decrease robbing, and to avoid possible uncapping as often happens when the bees were merely smoked out of the supers. They were given instructions in how to clean up sections, how to grade, wrap and store them. The reason this work was stressed particularly in Montgomery, Frederick and Washington Counties is that the bulk of the honey produced in this area is comb honey, and in general its appearance is definitely inferior as compared with No. 1 out-of-state honey, shipped in by dealers, and because it will be necessary to improve the appearance of comb honey if it is to compete with comb honey brought in from Pennsylvania, Virginia, and West Virginia. It is apparent that success is being enjoyed along this line as shown in the superiority in appearance this fall of Maryland comb honey on the Hagerstown market and at roadside stands.

### Educational Work with 4-H Club Members

Several days were spent working with a group of 4-H Club boys in Harford County who owned bee colonies and with another group near Poolesville, Montgomery County.

### Inspection and Disease Control

A small sum was available October 1, 1937, to be used to employ two (2) local County inspectors, one to work in the heavily infected areas in Baltimore and Harford Counties, the other in the similarly infected area including Prince George's and Montgomery Counties. Two beekeepers were trained and set to work but their activities were limited by excessive October rains. They averaged only 14 days work.

Following is a summary of their combined work:

| | |
|---|---|
| Number of apiaries inspected | 77 |
| Number of colonies inspected | 724 |
| Number of apiaries diseased | 18 |
| Number of colonies diseased | 62 |
| Per cent of apiaries diseased | 23.3 |
| Per cent of colonies diseased | 8.5 |

In addition to the inspection work accomplished by the deputy inspectors, the Extension worker in answer to requests for inspections in areas not serviced by the deputies, made the following findings:

| | |
|---|---|
| Number of apiaries inspected | 21 |
| Number of colonies inspected | 316 |
| Number of apiaries diseased | 12 |
| Number of colonies diseased | 102 |
| Per cent of apiaries diseased | 57.0 |
| Per cent of colonies diseased | 32.2 |

The totals of all inspection work done in the State for 1937 follows:

| | |
|---|---|
| Number of apiaries inspected | 98 |
| Number of colonies inspected | 1040 |
| Number of apiaries diseased | 30 |
| Number of colonies diseased | 164 |
| Per cent of apiaries diseased | 30.6 |
| Per cent of colonies diseased | 15.7 |

American Foulbrood infected apiaries were located in Washington, Frederick, Montgomery, Prince George's, Baltimore, Harford, and Wicomico. This disease has caused severe losses and threatens the entire beekeeping industry in Maryland. Aside from the actual loss in burned equipment, honey crops have been lost and the movement of colonies into orchards for pollination purposes has been restricted and in one outstanding case, a large orchardist has been unable to contract for the rental of colonies.

It is firmly believed by the Extension worker and those beekeepers in a position to know, that only a thorough going State-maintained inspection service can stop the losses caused by American Foulbrood and that until such a service is established, bee culture in Prince George's, Montgomery, Baltimore, Harford, and Wicomico Counties will remain a precarious undertaking and that the infection existing in Frederick and Washington will render bee culture in these Counties equally untenable. It must be borne in mind that no inspections were conducted during 1937 in Queen Anne, Caroline and Howard Counties which in the past have harbored diseased apiaries or in Carroll County where the Extension worker has been reliably informed that American Foulbrood takes a costly annual toll.

With these conditions in mind, the extension worker urges that an apiary inspection service be inaugurated and maintained in Maryland. The need is urgent. Without it, a well-paying industry involving some

three thousand beekeepers will return to the dark ages of bee culture, where bee trees will be cut for honey.

### Orchard Pollination

Increased interest is being shown by fruit growers in obtaining bee colonies for use in orchard pollination. Numerous requests were received from fruit growers, desiring information as to where colonies could be rented. In all cases contacts were made with beekeepers, and help given the orchardist in determining the number of colonies necessary and their placing.

### Honey Marketing and Publicity

Workers in apiculture are generally in accord in the belief that the greatest drawback to the honey business in former years was the lack of any real worthwhile advertising of the product. They are also convinced that the national increase per capita consumption recorded in the last two or three years has been due almost entirely to the increased volume of advertising honey has received.

With this in mind, a real effort was made to secure as much advertising for honey in Maryland as possible, with no funds and with the limited facilities available.

Use was made of the radio. Two (2) educational radio talks about bees and honey were broadcast.

As a major part of the marketing and publicity phase of the work, the Extension worker in cooperation with the Maryland State Beekeepers' Association, set up exhibits of bee products at four county fairs and at the annual meetings of the Maryland Farm Bureau and the Maryland State Beekeepers' Association.

The usual exhibits of honey were shown at Timonium and Bel Air. The offering for the first time of cash prizes at the Frederick ($50) and the Hagerstown ($100) Fairs stimulated real interest in the bee products exhibitions at these fairs. In spite of a general crop failure and a State-wide darkening of the honey crop, the quality of the honey remained at its usual high standard, comb honey excepted, which in addition to being generally darker was not as neatly or as uniformly capped as usual.

An important feature of the fair exhibits is the fact that at all the fairs mentioned, the beekeepers competed in identical classes as all premium lists were made uniform. This has been done so that producers in all sections of the State will compete under the same set of rules.

Another feature of the bee products competition is the bringing together of County Fair winners for a State-wide Competition at the Winter Show held in conjunction with the Annual Meeting of the Maryland State Beekeepers' Association. The First Annual Winter Honey Show held January 15, 1938, at Frederick attracted many County Fair winners in addition to other entries and proved to be one of the features of the Meeting.

It is hoped that the same standard premium list now in effect will be adopted at the Cumberland fair and that prize money matching the Hagerstown Fair ($100) will be made available. It is hoped that the Frederick, Timonium, and Bel Air Fairs will raise their prize money to $100 also.

### Attendance at International Beekeeping Conference

In November, the Extension worker attended the meetings of the American Honey Producers' League of which he was Secretary-Treasurer. These meetings were held in Washington, D. C. and all arrangements for the annual convention were made by him which, of course, put considerable demand upon his time.

## SIMPLIFICATION OF HONEY CONTAINERS AND ITS RELATIONSHIP TO INCREASED CONSUMPTION

By W. E. Braithwaite
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The problem of how to improve the handling, transport, and distribution of commodities is a matter of primary importance to practically all the industries of the country. Since most manufactured products require some form of container, the best method of packing and packaging is recognized as one of the fundamentals of economical and efficient distribution. Two important aspects of the problem present themselves for solution. First, there is the specific requirement of securing the least expensive and at the same time the best dimensions, shapes, and capacities, the most easily handled types of containers, the most satisfactory units from the consumer's point of view, to be considered. These are points which concern not only the industry but the carriers and all users of a particular commodity as well.

For a number of years the U. S. Department of Commerce has stressed the importance of adequate packing of merchandise for export shipments and through the Bureau of Foreign and Domestic Commerce has endeavored to acquaint shippers with the best export packing practices. The success attained in improving export packing and packages and in reducing the large losses formerly incurred prompted interested individuals and groups to suggest that the Department undertake similar work in the domestic field.

Coincident with the movement to reduce distribution costs through simplified packing, there developed a widespread and systematic effort to simplify package design, container sizes, capacities, dimensions, shapes, also unit of pack and quantity of contents. It has been found that goods well packaged are goods half sold. The immediate object has been

to eliminate the excessive or unnecessary variety in types of containers and sizes of packages (wherever it could be accomplished without too great sacrifice of individuality or other values) and at the same time concentrate production and packing requirements upon the sizes and types of containers and packages that will cover all needs without clogging the machinery of distribution and slowing down the rate of turnover.

In line with this movement, a number of industries have sought the cooperation of the Division of Simplified Practice of the National Bureau of Standards, U. S. Department of Commerce, in connection with the development and promulgation of simplified practice recommendations establishing a simplified list of recommended sizes and types, based on dimensions, capacities, shapes, units per package, etc.

Under the cooperative procedure of this Division, Simplified Practice Recommendations have been adopted for shipping containers such as steel barrels and drums, corrugated and solid fiber boxes for canned fruits and vegetables, ice cream cans and butter tubs. Simplified packaging programs have been worked out by the industries concerned for such items as machine, carriage and lag bolts, automotive engine parts for buses operated by electric railway companies, agricultural insecticides and fungicides, dental plaster, paints and varnishes, cut tacks and small nails, overhead electric railway material, razor blades, flashlight batteries, electric railway and motor parts, airbrake parts for electric railways, and so on.

In 1929, the National Retail Dry Goods Association's Committee on Simplification and Standardization of Wrapping and Packing Supplies requested the Division of Simplified Practice to assist in collecting data on the methods and materials used by department and specialty stores in the wrapping and packing of merchandise for delivery. As a result of this study, simplified practice recommendations were worked out and adopted covering recommended standard stock sizes for set-up boxes, folding boxes, corrugated boxes, notion and millinery bags.

Simplified practice recommendations have been promulgated covering other types of containers such as paper bags used in grocery stores and glassine bags.

In recent years the simplification of food containers and packages has been engaging the attention of producers, packers, distributors, and consumers of food products. This movement has led to the curtailment of certain sizes and types of food containers and packages, resulting in reduced inventories and the concentration of sales effort upon recommended stock sizes. This has eliminated considerable confusion and at the same time made it possible to have more orderly marketing, fairer competition and trade practices.

Perhaps the food container simplification program of greatest interest and widest appeal to the manufacturers, distributors, and consumers of food products is that developed for fruit and vegetable cans. In April 1928, the National Canners Association requested the cooperation of the Division in making a survey of the canning industry with a

view to ascertaining the diversity existing in the sizes of cans in use at that time. A report covering the results of the survey was submitted to the committee on simplification of containers of the National Canners Association. That committee recommended a reduction in the existing variety of more than 200 sizes of cans for fruits and vegetables to 27. The list of 27 standard stock sizes was accepted by the canning industry, subject to regular revision by a representative Standing Committee appointed to take charge of this simplified practice recommendation for cans. At a joint conference of members of the Standing Committee and other representatives of the canning industry and food distributors held at Chicago this last January, a revised list of 21 sizes was unanimously approved. This list has since been accepted by the industry and was promulgated effective September 1, 1937.

For several years the executives of the Mayonnaise Manufacturers Association had been convinced that the simplification of sizes of jars would be beneficial and advantageous in the marketing of mayonnaise and kindred products. Accordingly, as a preliminary step, the association requested our Division to secure from the manufacturers and packers of these products opinions on the desirability of reducing the variety in container capacities or sizes of packages. They were asked for specific suggestions as to the sizes that should be included in a simplified list. The majority of replies received favored the idea of simplification.

Based on the results of surveys made in 1928 and 1929 by the foodstuffs division of the Bureau of Foreign and Domestic Commerce of the United States Department of Commerce, the container simplification committee of the Mayonnaise Manufacturers Association made a tentative selection of sizes and requested the Division of Simplified Practice to arrange for a general conference of all interests to formulate a definite simplified practice recommendation for package sizes. Five sizes were approved, based on liquid capacity of the containers and these five sizes were subsequently accepted and adopted by the industry.

In 1934 the Standing Committee which was appointed in 1931 to take charge of the container and package simplification program proposed a revision of the recommendation to bring it into harmony with the sizes promulgated in the Code of Fair Competition for the mayonnaise industry, approved under the provisions of the National Recovery Act in March 1934. This revision was submitted to the industry and was subsequently approved by a substantial majority of the manufacturers, based on volume of production. It is to be noted that the question of shape or type of container was not considered. The survey made in 1928 revealed that at least 25 sizes of containers were being used in marketing mayonnaise and kindred products. The survey developed the further information that only 6 of these sizes were used or required for the distribution of 85 percent of the total production. It was apparent that 75 percent of the sizes (capacities) in which mayonnaise jars were manufactured could be eliminated without inconvenience to the trade. Another survey made in 1929 revealed that the percentage packed in

each of the 3 principal sizes (the standard 3½ ounce, 8 ounce, and 1 pint) increased during that year; the total percentage packed in these three sizes being over 81 percent as compared with 75 percent in 1928.

In studying the results of a survey of production, packaging, and distribution, for the year 1936, with comparisons for preceding years, we find that about 98 percent of the production is packed and distributed in the five standard sizes (4, 8, 16, 32 and 128 fluid ounces) adopted by the industry in 1935. I am mentioning some of the details and historical facts in connection with the development of this recommendation for mayonnaise packages because it has turned out to be one of the most successful food container simplification programs promulgated under our cooperative procedure. It is being very generally adhered to, and we believe it has aided very materially in the marketing of these products on a satisfactory competitive basis.

Other container and package simplification programs have been worked out for food products such as jars for preserves, jellies, apple butter; cartons for coffee; salt packages; ice cream cartons; ice cream cups; milk bottles; and carbonated beverage bottles.

One of the best examples of the revolutionary influence of packaging in the agricultural specialty field is that for honey. Honey is one of the oldest foods known to man and contains in limited quantity practically all the elements of a perfect food except some of the vitamins,—so I am told. For many years, honey was shipped exclusively in barrels and kegs. About the beginning of the present century, these wooden packages were dropped almost entirely and in their stead came the 60-pound square tin cans. These 5-gallon cans, packed 2 to the case or box, continue to this day as standard containers for wholesale shipments to distant markets.

During the past few years the honey producers and bottlers of extracted honey have given considerable thought to the simplification and improvement of retail packages as a means of increasing and promoting sales of honey. Many types, shapes, and sizes of containers (particularly in glass) have been used, and it is the opinion of several leaders in the industry, as well as marketing specialists in this field, that the excessive variety in sizes and types of containers has not only resulted in confusion but has acted as a deterrent to sales.

Most of you here are acquainted with the report compiled by Doctor M. P. Rasmussen giving the results of a national survey made in 1927 and 1928, covering the honey-marketing situation. This survey was undertaken by the Division of Cooperative Marketing of the United States Department of Agriculture in cooperation with the New York State College of Agriculture, at Cornell University. The purpose of this study was to ascertain the cause for the apparent lack of demand for honey. This study covered five phases of the marketing situation: (1) studies of price trends in honey; (2) a review of national production data and of local production and marketing of honey, in New York State; (3) studies of the wholesale distribution of honey in the principal cities;

(4) studies of retail distribution of honey in three cities; and (5) a study of consumers' demand.

This survey revealed the interesting information that extracted honey was being packed in at least 65 different types and sizes of containers. Data obtained from 42 firms packing a large quantity of extracted honey showed that a very large percentage of this volume was packed in relatively few sizes of containers. It was found that the operators of wholesale and retail grocery stores complained almost without exception that honey was being packed in too many sizes and types of containers. They were of the opinion that the multiplicity of sizes of packages was confusing to the consumer and actually interfered with the sale of honey. This and other findings in Doctor Rasmussen's report, which included a survey of consumers, disclosed a definite need for the development and promulgation of a simplified schedule of recommended stock sizes for honey packages.

Other studies in this field made by such experts as Harold J. Clay, associate marketing specialist, and James I. Hambleton, senior apiculturist, both of the Untied States Department of Agriculture; Mrs. Malitta Fischer Jensen of the American Honey Institute; Doctor J. E. Eckert, College of Agriculture, University of California; Natt Noyes Dodge, and others, all pointed to the necessity for some cooperative effort to establish a simplified list of stock sizes for retail packages. Accordingly, there was organized a container and package simplification committee to make a study and draft a recommendation for the consideration of the industry. This committee was composed of representatives of the American Honey Institute, American Honey Producers' League, Bee Industries Association of America, California State Beekeepers Association, Glass Container Association of America, Oregon State Beekeepers Association, Southern Beekeeping Conference, and Washington State Beekeepers Association. Members of this committee met with representatives of the industry in Saint Louis on February 27, 1933, at which time a tentative simplified list of recommended sizes for packages was approved.

Considerable discussion centered on the question of the most desirable method for indicating the quantity of contents; i.e., whether by liquid measure or by weight. The point was made that most beekeepers are not equipped to check on liquid measure, whereas accurate scales for weighing honey are easily obtainable. Attention was also directed to the fact that honey is usually purchased from beekeepers by weight and shipped by weight. It was also pointed out that, if honey is bottled and sold according to liquid measure, there will be a great deal of confusion as to filling points, etc. A motion was made and adopted at this meeting that the quantity of contents in container be specified on label in terms of weight, and that this should be taken into consideration in connection with future work on the simplification of honey containers. It was decided that the variation in specific gravity and density of honey would not interfere with the simplification of package sizes on the basis of

weight of contents.

There was also considerable discussion at this meeting regarding the type and design or shape of containers best adapted for use in marketing extracted honey. Several of the bottlers present considered it necessary to have a tall, slender jar to create eye appeal and to make the honey appear as light as possible. Others considered this type of jar deceptive and hard to handle, also a type of container that retarded sales on account of the difficulty encountered in removing the contents. It was decided that the matter of design or shape should be given further thought and study. In this connection, you may be interested in the results of a market survey and study made in 1934 for "Sales Management" by the Market Research Corporation of America. Consumers were asked to name branded products which, in their opinions, could be improved from the standpoint of either the product itself or the package. Criticisms received were placed in three groups or classifications as follows: (1) criticism of certain basic faults in package design; (2) criticism of paper, tin and glass containers that are too hard to open—among these were sardine cans, certain kinds of tops, caps or covers for honey and peanut jars and various types of "key" openings; (3) criticism of packages and containers which are unsanitary or inconvenient after they are open. Consumers, especially housewives, are acutely conscious of one thing and that is—inconvenience in the use of the product or the package. And let us not forget that 87% of the food is bought by women. According to "Sales Management", makers of so-called "gooey" or "sticky" products, like molasses, corn syrup and honey, apparently need to study their packages much more carefully because housewives are obviously dissatisfied with the way these products are coming to market. Several of the consumers interviewed said, "We would undoubtedly use more strained honey if it could be easily poured from their own containers without leaving the can or jar all sticky." Another consumer made the observation that "the can for a certain brand of honey is too large around to be handled conveniently with one hand. The lid must be pried off and is always a sticky mess. Some honeys are packed in glass jars with screw tops, a much preferred arrangement"—according to this consumer. Still others said—"We'd like a jar of honey that is short and squat instead of tall and thin, so that, when the honey gets down to a low level we can still use a teaspoon to get it out, without having to go into contortions." These criticisms are not new to the honey producers and packers. To me they are significant because they reflect the views of the consumers and give good reasons why more honey is not sold and consumed.

The recommended list of sizes for honey packages as approved at the meeting in Saint Louis in 1933, met with quite general approval of the producers and distributors of honey, but comments and suggestions were later received which indicated the need for certain changes to make the program more widely acceptable. Accordingly, the American Honey Producers League, at its meeting in February 1934, considered these

comments and voted unanimously in favor of the revised schedule. The revised list of recommended sizes were also approved by the simplified practice committee and subsequently accepted by the industry effective from October 1, 1934. In March of last year, the Standing Committee of the industry organized to take charge of the recommendation proposed that the schedule for stock sizes of glass containers be revised to include jars holding 24 and 48 ounces avoirdupois in place of pint and quart sizes formerly recommended. This change was proposed in the interest of uniformity and better marketing practices. In July 1936, the Standing Committee again proposed a revision to include a jar holding 32 ounces avoirdupois. This change was made in recognition of the indicated demand for this capacity and as a means of assuring increased adherence to the recommendation for stock sizes.

The revised recommendation which was approved by the industry and which is still in effect includes the following sizes and types of containers for use in marketing stock packages of extracted honey:

*Glass Containers*:
Capacity 5, 8, 16, 24, 32 and 48 ounces avoirdupois.

*Tin Containers*:
Capacity 2½, 5, 10 and 60 pounds avoirdupois.

This recommendation for stock packages is subject to regular review by the Standing Committee referred to a moment ago.

It is interesting to note that some of the States are setting up standards for containers and packages as well as standards for the honey itself. Under the general provisions of the Agricultural Code of California, permissive standards are as follows: 5 gallon cans, 5 and 10 pound tin cans or pails, 2 pound tin cans. Glass bottles to hold 3 pounds, 2 pounds, 1½ pounds, 16 ounces, 12 ounces, 8 ounces and 5 ounces are also recognized standards. The Department of Agriculture of the State of Oregon has established as standards the 5, 8, 16, 24 and 48 ounce package in glass or fiber containers and the 2½, 5, 10, and 60 pounds avoirdupois capacity tin containers. These standards conform to the recommended sizes by the industry.

Recently I was handed a copy of a report covering the results of a cooperative investigation conducted by the Pacific Coast Bee Culture Laboratory of the United States Department of Agriculture Bureau of Entomology and the California Agricultural Experiment Station on "Honey Marketing in California." In gathering information relative to the retailing and consumption of honey in California, personal visits were made to 179 retail stores during December 1931 and January 1932. Of this number 77 were selected at random from the important shopping districts in the Los Angeles metropolitan area. Two of the stores were visited incidental to other work in Fresno and Bakersfield, while the remaining 100 stores were fairly representative of the San Francisco area. The containers in which honey was packed for retail

sale, especially the glass containers, showed a wide variation in type and size. In the 179 stores visited during the study, 48 different sizes of packages in glass containers were recorded. These varied in net weight capacity from 1 ounce to 10 pounds, with the largest number of cases falling within the smaller sizes or less than 2 pounds. They found, of course, that metal containers are standardized for size and form or shape to a much greater extent than are the glass containers. The familiar cylindrical can or pail with a "plug" or friction top is in almost universal use with the exception of lots in bulk not ordinarily found in retail stores. While it is outside of my province to discuss prices, it interested me to learn that price is a contributing factor to a bad marketing situation. As might be expected, the price of honey to the consumer when reduced to a per pound basis varies according to the size or type of container in which it is sold. The study showed that there was a great variation in the price per pound even with the effects of differences in container size partially removed. There was a very considerable variation in the price per pound at which honey was sold in the same sizes of containers. It is easy to see how a large number of package or container sizes contribute to a multiplicity of prices. As revealed in the report, the retailer cannot always be sure whether he is overselling or underselling his neighbor because his sizes are different and the matter is further complicated by the large number of brands. The effect that this confusoin of container or package sizes, brands, and price has on the volume of retail sales of honey is also clear. It is a significant fact that the lack of standardization of container sizes was repeatedly mentioned by the retailers as working against the successful handling of honey, for it was said that even the regular purchasers of honey found it difficult to carry in mind definite ideas of size and price. In looking through the June 14 issue of "Advertising Age", I noticed an interesting article to the effect that "cost of purchasing new packaging machinery and concomitant expenses in making change-over are given us as major reasons why the majority of manufacturers—exclusive of those whose products sell for a flat nickel or dime—are preferring to increase price rather than reduce sizes of packages.

A well-known economist with years of experience in making economic surveys of a number of agricultural industries in this country and other countries stated that in his opinion the future of the beekeeping industry would be greatly brightened and materially enhanced if beekeepers all over the country would only adopt some uniform method of merchandising their honey and cooperate in selling it in an orderly manner.

It is apparent therefore that much remains to be done in connection with the development and promulgation of a simplified schedule of package sizes that will be adequate and generally adhered to.

In closing, I would like to suggest the appointment of a representative committee to study the relationship of container or package simplification to the marketing of honey in the United States. This committee

could work with the Standing Committee in charge of Simplified Practice Recommendation R156-37, Containers for Extracted Honey. This joint committee would have the close cooperation of our Division of the National Bureau of Standards, and I am sure the experts in the United States Department of Agriculture would be pleased to cooperate in every way possible in connection with such a constructive program.

I thank you.

## VALUE OF INSECT POLLINATION

By Dr. E. N. Cory
State Entomologist, University of Maryland

Most people think of insects as pests. Few realize the large commercial value of many forms. The silk importations into this country amount to $423,646,000; the honey industry $16,000,000; wax $2,000,000; shellac $12,000,000; cochineal $100,000; cantharidin $1,500; and nut galls $306,000; making a total of over $454,000,000 directly traceable to insect activities. The total value of insect pollinated crops amounts to over two billion dollars. The following crops depend almost exclusively upon insects pollination for setting of fruits and seeds: apples, pears, peaches, plums, prunes, cherries, strawberries, raspberries, blackberries, cranberries, oranges, lemons, grapefruit, figs, melons, cucumbers, pumpkins, squash, beans, peas, eggplant, tomatoes, peppers, clovers, alfalfa, soybeans, cowpeas, sweet clover, cotton and many flowers. This immense total, of course, is offset to a very large extent by the cost of control and the destruction wrought by destructive insects, but the balance is probably slightly in favor of the beneficial insects.

Just by way of illustration of the necessity for insects, I want to briefly tell you the story of the Smyrna fig. This fig, originally imported from abroad mainly into California, was a commercial failure until it was learned that it was necessary to have a small insect to pollinate the fruits. To be sure, fruits were produced without the aid of this small wasp, but the flavor was vastly improved by the pollination.

The flowers of the Smyrna fig are all females, and no pollen is produced anywheres on the tree. There is a wild fig, known as the Caprifig, which contains male flowers producing an abundance of pollen. It is carried from these wild figs by a small wasp-like insect into the flowers of the opening Smyrna fig.

On the Caprifig the female flowers are replaced by gall-like swellings in which the larvae of the wasp develop. One generation of the figs, the so-called *mammae*, remain on the tree over winter. When they are ready to drop a new crop, the *profichi*, are developed, and the insect that has been hibernating in the *mammae* leaves them and enters the opening in the *profichi*. The *profichi* of the Caprifig develops at the same time as the Smyrna fig and the female emerging pollen-covered from them enters the small anterior opening of the Smyrna fig, and thus pol-

lenizes the florets, making the Smyrna fig edible. A third crop of Caprifig develops when the Smyrna fig is in bloom. This is known as the *mammoni*. It serves to carry the wasp over until the winter galls of *mammae* develop.

Caprifigs have been introduced into all the commercial fig-growing sections, and with them the wasp which has made possible the production of first class figs in the United States.

The above complicated history of an insect in its relation to the production of fruit serves to emphasize that orchard pollination is a necessity in many orchards where the proper distribution of fertilizing pollen is not available. Many years ago the need for bees to pollinate fruit was not realized as in this day, and large blocks were planted solidly to single varieties with disappointing results in many cases, due to the fact that some varieties are self-sterile while others are self-fertile. But all varieties seem to benefit in production and quality by cross-pollination. In some orchards an attempt has been made to rectify this condition of large blocks of self-sterile varieties by top-working a sufficient number of trees so that pollenizing varieties that bloom at the same time as the main variety are present to furnish pollen. In other orchards the practice has developed of hanging in the trees bouquets of varieties that will pollenize the main crop. In order, however, that these bouquets shall function properly or the grafted trees work to best advantage, it is necessary to have a sufficient number of bees in the orchard. The average orchardist is not able to take care of bees. Consequently, the general practice is to rent bees from beekeepers at a fixed rate, the bees to be brought in by the beekeeper at the beginning of the blooming period and removed by him at the close of the blooming period. The cost of this operation to the orchardist is easily much lower than he could well afford to pay for the increased crop which he is sure to get when abundant bees are present and pollen is available in the bouquets that the orchardist places around the self-sterile trees.

The beekeeper rarely profits beyond the sum that he asks for this service, but in those parts of Maryland where a white clover flow is available, no damage should result by this movement of the bees from the usual site to the orchard, provided, of course, that the orchardist does no spraying with poisons during the period that the bees are on his premises.

Incidently, this question of the poisoning of bees becomes more complicated each year. We are accustomed to thinking principally of arsenic poisoning of bees, and in the sections where airplane dusting covers large acreages of crops it may be a very serious factor. In recent years the use of rotenone dust has created a somewhat similar situation in some of our neighboring states, and bee-keepers have lost heavily from the poisoning of bees by rotenone.

There is a constant conflict of interests in all agricultural activities. Spraying may kill bees and other beneficial insects that serve as parasites

or predators of the pest which the sprays are designed to control, and on the other hand if the spraying is omitted, the pest may exact a tremendous toll from the unprotected crops. So it is of ultimate importance that all interrelations between insects, man and the plants and animals that he utilizes must be thoroughly studied and the final consideration must be to the greatest good for the greatest number.

Fortunately beekeepers can keep their bees in isolated areas for their main crop, and with the proper agreement with orchard owners can furnish the essential service at a stipulated price that the orchardist must pay, provided, of course, provision is made in the contract with regard to the withholding of poisonous sprays during the period that the bees are in the orchard.

REPORT

OF THE

# Maryland Vegetable Growers' Association

## NINETEENTH ANNUAL MEETING

### Morning Session

**Wednesday, January 12, 1938**

**Baltimore, Maryland**

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The nineteenth annual meeting of the Maryland Vegetable Growers' Association was called to order by President H. J. W. Rayner, Salisbury, Maryland at 10:00 A. M. Mr. S. W. Crosthwait was introduced as the first speaker.

## CONTROL AND RETARDATION OF THE JAPANESE BEETLE IN MARYLAND

S. W. CROSTHWAIT
University of Maryland

It is indeed a pleasure to be here to present to you and have your reaction on the Japanese beetle retardation program which is being sponsored by the University of Maryland.

However, before entering into a discussion of a program and policy I should like to say something about this conspicuous green and brown insect we call the Japanese beetle. The Japanese beetle is a new insect to Maryland and a comparatively new insect to the United States. If I were to tell you that it is now threatening the agricultural industry of our state, you would probably say I am an alarmist. The Japanese beetle is going to be, by far, the worst insect with which our farmers have had to deal. It is going to be the worst insect with which our city people have ever had to deal. It is capable of blighting parks, ornamental gardens and lawns. Its destructiveness may be compared with that of the Mexican bean beetle. The main difference is that the Mexican bean beetle feeds only on beans, or a few closely related plants, whereas the Japanese beetle feeds on over 200 different plants. A few of the more important agricultural plants attacked are: Corn, soybeans, apples,

peaches, cherries, plum, grape, beans, asparagus, strawberry and raspberry; such shade and ornamental trees as elm, cherry, willow, linden, poplar, pin oak and Norway maple. Garden ornamentals such as rose, dahlia, hollyhock, aster, canna, zinnia and marigold are readily fed upon. The larvae, or grubs, often do serious damage to lawns, golf greens and permanent pastures.

The control of this pest is very expensive. I wish to quote a few figures which were obtained from heavily infested areas in New Jersey and which give an idea of the annual expenditures and cost for control; City blocks $62.80 per block, sweet corn $2.00 per acre, apples $7.15 per acre, peaches $8.80 per acre, estates $513 per estate, golf courses $618 per course, cemeteries $225 per unit. The damage to farm products is as follows: Field corn $5 per acre, sweet corn $17.50 per acre, early apples $123 per acre, early peaches $154 per acre, general farms $1.76 per acre.

You may recognize the Japanese beetle as being a small insect about the size of one's little finger nail, with a metallic green head and neck, and coppery brown wing covers. You may be able to tell it from other insects by examining the tip of the abdomen for 12 white spots. These marks distinguish it from many other insects that resemble the Japanese beetle. The beetle makes its appearance about June 10 and increases in numbers until about July 25th. Beginning the first week in August the number of beetles present falls off rapidly. Few beetles are found after the first week in September. Each adult female lays from 30 to 50 eggs. Sod land, such as lawns and permanent pastures are preferred for egg depositions. The eggs hatch in about 14 days into tiny white grubs, which feed upon and injure the roots of grass and other plants. They grow gradually throughout the summer and fall, lie dormant in the winter and complete their growth by the 10th of May, then go into a pupal or resting stage, from which they emerge as adult beetles.

The Japanese beetle is very hard to control. There are a number of practices which may be used that are more or less effective, such as spraying, trapping, soil treatment, planting plans, agricultural adjustment and the colonization of parasites. No effective stomach poison has as yet been developed which will kill any great number of beetles. Beetles will leave thoroughly sprayed plants, but they are not killed. They only move to nearby unsprayed plants.

Perhaps one of the most effective ways to reduce the number of beetles is by trapping. We have often been asked how effective are traps. The standard Japanese beetle trap is about 60 per cent effective. To give you some idea as to the number of beetles that can be caught in traps, I wish to quote some figures obtained four years ago in the heavily infested area of New Jersey. The State Department put out 1,200 traps with 10-gallon containers and operated them in an area of 50 square miles. Forty-seven tons of beetles were caught in these traps. The last year that we operated in the vicinity of Elkton we caught seven

and one-half barrels of beetles in less than 1,000 traps. In Cambridge last year we caught 80 gallons of beetles. There are approximately 3,300 beetles in one quart measure.

Lawn treatment is an ideal way to retard and delay the spread of beetles. We are going to ask every individual in an infested town to treat his lawn this year for beetle control. It is estimated that if every individual in an infested town would treat his lawn it would destroy from one-half to two-thirds of the breeding area of the Japanese beetle for a period of five years.

*Agricultural Adjustment.* We have often been asked whether we were going to be able to live with the Japanese beetle, and continue to grow crops. The answer is yes. However, as I said before, it is going to be by far the worst pest with which we have ever had to deal. It is going to be worse than all of our other insects combined, but we are going to be able to live with it. The acute condition with which we will suffer at the beginning will be relieved materially by agricultural adjustment. There will be some things we will not be able to grow economically under beetle conditions. These things will have to be discarded and replaced by something else that is not severely attacked. Then, as time goes on we will learn better how to control the beetle. More people will practice control. There will be other crops in which we will have to change our planting dates, and possibly grow different varieties than those we are now growing. For instance, it has been found that if corn is planted so that it will silk after August 10th there will be very little damage from the Japanese beetle.

Parasites and other biological factors are going to aid us in reducing the number of beetles. We are now working on this phase of control. In the heavily infested section of New Jersey which has been thoroughly colonized, the parasites are accounting for about 15 per cent reduction in beetles.

Now for our Program and Policy. For the past nine years the University has made strenuous efforts to keep the state free from beetles. We have done everything within our means to delay and retard the beetle and keep uninfested territory free from beetles. We feel and know that we have accomplished a great deal along this line, though we have been greatly handicapped due to lack of appropriations. During 1933 the money that we had for this work was reduced 40 per cent. In addition to this, it was necessary for us to put more and more money into nursery and farm products inspection so that we could guarantee our nurserymen and farmers a market in a non-infested territory. As most of you know, the last legislature made available $40,000 for retardation work. Now $40,000 is a lot of money; however, when work has to be done in 23 counties and the city of Baltimore, it does not leave a large amount for any particular section. We could spend this money in the heavily infested territories such as Cecil and Baltimore Counties and do a great deal of good. However, we must care for the situations in every county.

We have had quite a time getting enough money to adequately care for the entire state. After careful thought and consultation with a number of people throughout the state who were interested in Japanese beetle control, we have devised a Program and Policy whereby we can expand our $40,000 to do $120,000 worth of retardation work. We went to Washington, D. C. and presented this Program and Policy to Mr. Lee A. Strong, Chief, Bureau of Entomology and Plant Quarantine. Mr. Strong and his associates agreed that the program was one of the best that they had ever seen, and he indicated that if our people would go along with us on the basis as outlined in our program, the Federal government would enter into the program and cooperate.

The program calls for thorough-going retardation measures in all localities between the Federal government, State, and local governmental units, and will consist of soil treatment, trapping, spraying and the colonization of parasites. We have divided the state into three areas; namely, the uninfested area, the lightly infested area and the heavily infested area. In the uninfested territory we will continue our quarantine and attempt to educate every man, woman and child in the latest methods and means of controlling and retarding the development of the Japanese beetle, so that they will be able to help us keep this territory free from beetles. The lightly infested territory involves those areas where a few beetles have been found, such as towns and other localities in a county. In this area retardation work is to be done in an endeavor to keep the beetle from increasing in numbers and delay the time when these minor infestations will develop into larger ones and radiate out into the surrounding country. The heavily infested areas consist of territory in which the beetles are doing serious damage. In such a territory it is impossible for the State or anyone else to take care of each individual problem. In this area large-scale demonstrations are to be made to advise the people as to the best methods and means of controlling and retarding the development of the Japanese beetle. In Cecil County we expect to put on a large-scale trapping demonstration which will take in approximately 30 square miles. We plan to thoroughly trap every farm within this area. By thoroughly trapping, we mean that if Mr. Jones needs 100 traps, we expect to put 100 traps on his farm and if Mr. Brown needs 200 traps, we expect to put 200 traps on his farm.

As I stated in the beginning, our program calls for equal cooperation between the state, Federal government and the local people. This means that for every $1.00 the State spends, the Federal government will put up $1.00 and the community where the work is being done will put up $1.00. In other words, one-third of the expense will be borne by the state, one-third by the Federal government and one-third by the local community or county. In the heavily infested area where we are putting on the large-scale demonstrations, and in which the expenditures run into extremely large sums, we are asking the individuals involved to cooperate with us, and we are asking them to go along with the State and Federal government on a fifty-fifty basis. In other words,

if the operation happens to be trapping, and we are cooperating with Mr. Jones in trapping his farm, we will ask Mr. Jones to put up $1.00 for every $1.00 the State and Federal government puts up. If Mr. Jones needs 100 traps to trap his farm thoroughly, we will say to him, "If you will put up and operate 50 traps, the State and Federal government will put 50 traps on your farm and operate them." Of course you folks know that it will cost the State money to operate the traps, and that being the case the State is willing to pay Mr. Jones for operating the State traps. Therefore, if he will agree to operate his traps and our traps, under our direction and supervision we will pay him at the rate of 1½ cents per day, per trap, not to exceed 60 days, to operate our traps. That will mean to Mr. Jones that he will have earned approximately enough money at the end of the season to pay for his traps. In other words, it will mean that for his labor and service he will have earned 50 traps. After cooperating two years in this manner, with Mr. Jones, he will have earned enough traps to equip his farm. It will be necessary for us to cooperate with Mr. Jones for two years in order to show just what can be accomplished through trapping.

In the lightly infested areas where beetles are found, it would be a tremendous job to get together enough cooperators to take care of the situation adequately. In addition to that, the overhead in paying so many individuals would be entirely too costly. Therefore, in those areas we feel that it would be better if the local people or communities could get together their money in a lump sum and add it to the state and Federal appropriations so that the work could be managed and undertaken under one head, and all of the territory throughout the town could be thoroughly taken care of. As to how the money is gotten together; we do not care. It may be put up in equipment, in labor, or services, though it is our thought that the purchase of equipment is an excellent way to put up the money, because that leaves something tangible in the community. The town or community will have these traps in case of emergency, and they will last a number of years if proper care is taken of them.

We have arranged with the State Penitentiary to make these traps, and it is our hope to get them at a price much lower than they can be bought on the open market.

Personally, I feel that it is a program that everybody in the county should be interested in, and one in which everybody, whether he has beetles or not, should contribute toward. We operate only in infested areas, but the people that are not in infested areas benefit just as much, or even more, than those who live in a community where the beetle is found.

I might say that in several counties money has been appropriated by the County Commissioners, and in others the local communities are putting up the necessary funds.

It has certainly been a pleasure to be here today, and to present this program to the Maryland Vegetable Growers Association. We feel that

your organization can be of great help to us in putting this program across. I thank you.

Mr. H. C. Diehl, of the U. S. Department of Agriculture spoke extemporaneously on "The Varieties of Vegetables Suitable for Freezing Preservation," but the subject matter was not made available for publication.

## DISEASE RESISTANCE IN VEGETABLE CROPS

By C. E TEMPLE, Professor of Plant Pathology
and State Pathologist,
University of Maryland

Plants are very plastic. Like modeling clay in the hands of a skilled workman, they can be molded into various forms to fit the fancy of the plant breeder. About forty years ago, plant pathologists turned their attention to the breeding and the selection of varieties and races of plants that would withstand or resist the attack of diseases. From that beginning, has come a long list of valuable varieties that are either resistant or immune to destructive diseases.

These disease-resistant varieties have been discovered or created in all of the different groups of plants such as the cereals, fruits, flowers and vegetables. Even though almost every kind of cultivated crop has one or more strains or varieties that are resistant to some kind of disease, the vegetable crops are out-standing in this respect. More progress has been made with vegetable crops than with any other group in the breeding of resistant varieties. This is all the more important, because the vegetable crops, as a group, have been harder hit by diseases than any other kind of plants.

At this point, a few definitions may be in order: All plants belong to the Vegetable Kingdom; but the *vegetable crops* included in this paper are those ordinarily grown in the home garden for table use, in the field as truck crops or market garden crops and also the field crops grown for the cannery. *Strain* is distinguished from variety in that it is a selection from a variety and usually differs from the variety in at least one particular. *Pure-line* is a single-plant selection but it is one that reproduces true to type. A *disease-susceptible* variety is one that takes the disease and is damaged by it; whereas a *disease-resistant* variety is one that is not damaged by the disease, although it may be slightly affected by it. On the other hand, a variety that is *immune* to a disease does not take the disease at all. A *virus* disease is caused by something in the juice of a plant, that acts very much like a poison and that is usually distributed from plant to plant by insects.

The fundamental differences between disease resistant and disease-susceptible varieties are inherited. In most cases, the reaction of a

plant to a disease cannot be determined by any visible characteristics without subjecting it to infection. Two plants may look exactly alike and be exposed exactly alike to a parasite; but one may be killed prematurely by the parasite and the other may not show any infection whatever by that same organism. In some cases, when a resistant and a susceptible variety are crossed, resistance to a disease is dominant over susceptibility to that same disease; in other cases, susceptibility is domnant over resistance. When these facts have been established by experiment for any particular disease, the breeder knows, in advance, what he will obtain by making certain crosses.

The question now arises: How is the first plant resistant to a given disease obtained? Fortunately, in many varieties an occasional plant can be found with natural resistance. Yellows of cabbage, wilt of peas, the Fusarium wilt of tomato and many others are in this class. In a few cases, a commercial variety may be found, that is already resistant or immune to a disease. The Irish Cobbler potato, for example, is immune to the wart disease, and red and yellow onions do not take the smudge disease that is so prevalent on white varieties. At the outset, the breeder usually tests for resistance all of the varieties that he can obtain both in this country and in foreign countries. These tests are made under the most favorable conditions for infection that can be found. If no variety is found to be resistant, there may be individual plants that are resistant to the disease under consideration. If so, these are selected and the progeny of each plant is then tested for resistance. The selection of the most promising plants for disease-resistance and for utility from each generation may result in the kind of plant desired. If not, crosses must be made by using any resistant varieties, strains or individual plants found and susceptible plants of the type desired. After this is done, and back-crosses are made to each parent for increasing the resistance and the utility of the stock, several generations of the progenies of such crosses are required to secure a resistant pure-line of the type desired for continuous multiplication. The selection of seed from the most desirable plants as practiced by many gardeners and farmers is a procedure that tends to keep up the purity and productivity of the variety and it may result also in the selection of individual plants resistant to one disease or another.

By using the methods here outlined, a rather large number of varieties each resistant to one or more diseases has come into use and other valuable disease-resistant varieties are in the making. An incomplete list of the vegetable varieties resistant to disease is discussed briefly.

Every asparagus grower is familiar with the rust-resistant Mary Washington and Martha Washington varieties that were originated by J. B. Norton. Wherever rust is a factor, these are the varieties to grow. They have been adopted extensively both for their good quality and for their resistance to rust.

Beans are especially susceptible to diseases. Some progress, however,

has been made in the breeding of varieties resistant to anthracnose, rust, and mosaic. Considerable work must be done yet before disease-resistant varieties of beans suitable to Maryland growers can be recommended.

Mosaic of lima beans is attracting attention in some states. A. L. Harrison of New York reports 95 to 100 per cent of the plants of the following varieties affected with mosaic: Jackson Wonder, Woods Prolific, U. S. No. 2, Florida Speckled, and Willow Leaved. The resistant varieties which were free from mosaic or had only an occasional affected plant, were: McCrea, Burpees Fordhook, King of Garden, and Challenger. Some of these are grown in Maryland.

The Fusarium yellows disease is the most destructive and wide-spread disease of cabbage in Maryland. This disease is caused by a fungus that lives for years in the soil after it once becomes established there. This fungus has found its way into nearly all garden and field soils where cabbage has been grown regularly for many years. It is still the principal cause of failure of cabbage in spite of the fact that there are a number of good early and late varieties resistant to yellows listed in seed catalogs. Several years ago the writer tested 13 yellows-resistant varieties along with several susceptible varieties on badly infested soil. Nearly all of the susceptible plants died before forming heads; but in contrast, the resistant plants grew to maturity and developed heads just as if no yellows disease was present. Why should anyone continue the use of yellows-susceptible varieties of cabbage, when good resistant varieties are available?

Leach and Currence in Minnesota have reported a very destructive Fusarium wilt of muskmelon. They report that the Honeydew and the Persian melons are partially resistant but all other varieties are very susceptible. A cross between Golden Osage and Honeydew gave resistant plants of various types. This breeding work on muskmelon in Minnesota may result in the production of a disease-resistant variety for the Maryland growers. At any rate, some consideration should be given now to the wilt of cantaloupes in the East where the disease may eventually become a limiting factor in the production of this crop.

Celery is not an important crop in Maryland, although in the hands of certain growers it has been made to pay. It is damaged by several diseases, one of which is the wilt. In general, green varieties are resistant to wilt and the golden varieties are susceptible; but the Michigan Golden, a selection from Golden Self-blanching, is highly resistant to wilt.

In cucumber, there is need for some varieties resistant to mosaic, known also as the white pickle disease. This disease often causes great losses to our cucumber growers. Some breeding work for resistance to mosaic has been done at the Iowa Agricultural Experiment Station with promising results; but the Chinese Long, a highly resistant variety, and the Shamrock with some resistance, reported by that station, are not suitable for Maryland markets. These varieties, however, constitute an impor-

tant step toward the production of the type of cucumber desired by Maryland growers.

Peas are affected by several important diseases one of which is the Fusarium Wilt. This disease can be carried on the seed. When it becomes established in the soil it will kill nearly all susceptible pea plants before the pods develop. Whole fields of peas have been observed, that died prematurely. There are now many wilt-resistant varieties of peas offered by seed firms. The grower can find one of these new varieties that will fit his needs. There are early, mid-season and late varieties. In each group may be found both smooth and wrinkled seed varieties, some with small pods and others with large pods. With all of these to select from, there is little excuse for any one to plant wilt-susceptible varieties of peas in his garden or in his field.

An extensive breeding program on peas is under way by seed firms and experiment stations. In Maryland, varieties from nearly all foreign countries as well as the domestic varieties and a few thousand hybrid selects have been grown in the disease-resistant plots during the past 19 years. Wilt resistant varieties can be made to order; but the most urgent problem, now, is the production of varieties of peas resistant to one or more of the root-rot diseases.

The potato is our most important vegetable crop. The most destructive disease of the potato is late blight. This disease is not only destructive, being able to destroy the entire crop, but it is also very difficult and expensive to control, especially under favorable conditions for the disease. In 1937 late blight developed generally over the State and it was followed by one of the worst cases of tuber decay in many years. In some places fully 50 per cent of the tubers decayed in storage. No commercial variety resistant to late blight has been found; however, such varieties are in the making now. Reddick of New York, and Stevenson and his co-workers of the U. S. Department of Agriculture have brought into this country many cultivated varieties and wild forms for breeding purposes. Thousands of progenies have been grown and tested for resistance to late blight and to other diseases. Some seedling strains have been found to be highly resistant to late blight and a few may be immune to it. The results to date indicate that it will be only a matter of time until the public will be able to obtain potatoes of good type, high yielding, early and late varieties resistant to late blight and to certain other diseases.

In 1937 Stevenson and his co-workers published the following data in Phytopathology 27:1067.

Yields in bushels per acre of susceptible and resistant varieties of potatoes grown in a non-sprayed plot and subjected to a severe late blight epidemic at Presque Isle in 1936

| Variety | Type | Yield Total | Yield U.S. No. 1 | % No. 1 | Amount of tuber decay |
|---|---|---|---|---|---|
| Green Mountain | Susceptible | 184 | 140 | 70 | Extensive 50% or more |
| Houma | Susceptible | 146 | 110 | 70 | Extensive 50% or more |
| No Blight | Resistant | 415 | 330 | 73 | None noted |
| S 44488 | Resistant | 327 | 308 | 86 | None noted |

The report continues: "These varieties were grown in a very wet soil favorable for blight and tuber decay. The foliage of the Green Mountain and Houma varieties was killed early by the late-blight fungus. No Blight and S 44488 were not severely injured, although both developed some infected foliage."

This breeding for resistance to late blight is only a part of an extensive national potato improvement program involving many states and the Federal Government. The Maryland Experiment Station is cooperating in this program. In one of this Station's projects, more than 2000 plots were planted in 1937 for studies on disease resistance. Vascular discoloration of the stem-end of the tuber is a serious disease in this State. An attempt is being made to find varieties or seedling strains resistant to this disease; but, no doubt, this will require several years.

Viruses cause destructive diseases of the potato. They have caused the running-out and the disappearance of varieties that were once extensively grown. Twenty years ago, the McCormick variety was the principal late crop variety grown in Maryland, but now it has about run is course. It is very susceptible to several virus diseases. These diseases are carried in the tubers and become worse from year to year Finally the low yield and the small size of the tubers force the grower to discontinue growing the variety. None of the older commercial varieties of potatoes are resistant to the virus diseases; but some of the newer varieties are resistant to certain virus diseases. Among these may be mentioned the Katahdin and the Chippewa, two varieties produced by the U. S. Department of Agriculture, and the Warba produced by the Minnesota Agricultural Experiment Station. These are good commercial varieties and they are resistant to mild mosaic. The fact that they are resistant to a virus disease, lends encouragement to the breeders who are working with thousands of seedling strains, many of which are of hybrid origin.

The worst disease of spinach is the blight caused by a virus. The Virginia Truck Experiment Station has developed some varieties that are resistant to blight. One of these, Virginia Savoy, selected from a cross between Manchuria and a desirable susceptible variety. Then, this new Virginia Savoy was crossed with King of Denmark and another blight-resistant variety known as Old Dominion was produced. These two varieties are extensively grown in Maryland and should be used whereever blight destroys the crop.

Some continue to grow the old Golden Bantam sweet corn in their gardens. This variety has wonderful quality but it is very susceptible to Stewart's Disease which causes the plants to wilt and die. Nearly all canners who formerly packed this variety of corn have switched to the Golden Cross Bantam and to other new varieties that are rather resistant to Stewart's Disease. These new varieties are desirable also for the market gardener to grow.

The tomato breeding work of J. B. S. Norton of Maryland, Essary of Tennessee, Edgerton of Louisiana, Pritchard of the U. S. Department of Agriculture and others has revolutionized the varieties of tomatoes grown in this country. The most destructive disease of the tomato, known as the Fusarium wilt, is spread from coast to coast. Wilt is controlled everywhere by the use of resistant varieties. The number of these varieties is too large to list; however, the Marglobe seems to be the most extensively grown of all.

In 1932 we began the testing of certain varieties of watermelon for resistance to the Fusarium wilt. County Agent J. P. Brown of Salisbury selected a field which had been planted to watermelons the year before but had failed to produce any melons. Three varieties were tested namely, Iowa King, Pride of Muscatine and Iowa Belle. Iowa King was susceptible to wilt as all of the plants died prematurely. Pride of Muscatine was about 50% resistant and Iowa Belle was very resistant to wilt as none of the plants of this variety wilted.

Wilt-resistant varieties of watermelon have been tested on wilt-sick soils in Wicomico County every year since the original test was made in 1932 with varying results. These tests have established two facts: (1) The wilt of watermelon is established in the soils of the commercial melon growing section of the State to such an extent that susceptible varieties cannot be grown in certain fields; and (2) no resistant variety tested thus far is suitable in both size and quality to take the place of wilt-susceptible varieties now grown. In this connection County Agent J. P. Brown makes the following comment on his observations of the 1937 melon crop: "The wilt disease was unusually severe this season. In many instances entire fields were plowed under because the crop was a complete failure. It is absolutely necessary that wilt-resistant varieties be found so that farmers in this county can grow a crop successfully". This condition is the natural result to be expected where melons have been grown for a long time on the same farms. Some breeding work on melons should be done under Maryland conditions by using the local wilt-susceptible varieties and the wilt-resistant varieties developed in other states as parental stocks. In time, such a procedure would result in the development of varieties that would be resistant to wilt and, at the same time, possess the other characteristics of size, rind color, and quality of flesh desired by the Maryland growers.

It has not been possible to discuss very many disease-resitant varieties or even to list the varieties that are known to be resistant to one or more

diseases. It has been my object, rather, to attempt to advance the cause of disease-resistance in plants by creating an active rather than a passive attitude toward the subject by the growers who are the principal beneficiaries. The time has arrived when the growers can afford to keep abreast with the work that is being done on their particular crops.

In conclusion, it may be stated that the plant worker can produce almost any kind of plant desired, if he has the facilities with which to work and the time to devote to the job.

## AFTERNOON SESSION

The entire afternoon session was devoted to a general discussion of the present status of organization among vegetable growers and plans for developing a more effective set-up to serve the vegetable growing industry. At the conclusion a motion was passed to appoint a committee to consider the matter more fully and to bring in a report suggesting a definite plan of procedure in reorganizing the Association to better meet the needs of the vegetable growers of the State.

### Report of the Nominating Committee

A. M. Todd and T. H. White.

The following nominations were made for the offices of the Association for the year 1938:

President—Egbert Hawkins, Harmans,
Vice-President—H. Street Baldwin, Hyde P.O.,
Secretary-Treasurer—W. R. Ballard, College Park, Md.
Directors:
H. J. W. Rayner, Salisbury,
J. Miles Lankford, Pocomoke,
J. Forney Young, Hagerstown.
Director for Farm Bureau—F. Ridgely Todd, Sparrows Point,
Delegate for Farm Bureau—R. T. Merritt, Sparrows Point,
Director for Agricultural Corporation—W. G. Lynch, Dundalk.

These persons were elected unanimously as officers for the year.

A motion was passed to the effect that the Director for the Agricultural Corporation should become Director for the Southern Cooperative in the event that the Agricultural Corporation is absorbed by the Southern Cooperative.

The Auditing Committee, Richard T. Merritt and H. A. Hunter, reported that the books of the treasurer were in order and showed a balance of $68.23 in the treasury as of December 31, 1937.

The report of the committee was adopted.

The Resolutions Committee, Joshua Lynch and J. P. Brown, presented the following resolutions which were adopted:

RESOLVED, that the Maryland Vegetable Growers' Association go on record as favoring the campaign for retarding the spread of the Japanese Beetle.

RESOLVED, that the Maryland Vegetable Growers' Association favor the extension of the seed law to cover seeds of vegetable crops.

RESOLVED, that the Maryland Vegetable Growers' Association ask the University of Maryland to carry on more demonstration work in the vegetable growing counties where the growers request such work.

RESOLVED, that the Maryland Vegetable Growers' Association develop a program of activities in various producing regions of the state which will help in the solution of specific problems relating to the industry.

AND BE IT FURTHER RESOLVED that we extend our appreciation to our Secretary, Mr. Ballard for his untiring efforts and work in our behalf.

## POTATO SHOW

The receipt of larger appropriations for prize money made it possible to enlarge the schedule of classes, and this resulted in a larger number of entries than in former years. Had it not been for an outbreak of late blight, the exhibit would undoubtedly have been still larger.

The awards in the various classes were as follows:

### ADULT CERTIFIED

*Irish Cobblers*—1st., Foster Yost, Accident; 2nd., Merrill Beauchamp, Berlin.

*Smooth Rurals*—1st., Foster Yost, Accident.

*Russet Rurals*—1st., Richard DeBerry; 2nd., Wm. P. DeBerry; 3rd., Wm. F. DeBerry; 4th., Robert DeBerry, all of Oakland.

*Dakota Red*—1st., Wm. Cissil Simpson, Jr., Clarksville; 2nd., Clark Crawford, Keedysville; 3rd., John Jehle, Hyattsville; 4th., George Buckingham, Marriottsville.

*Any Other Variety*—1st., Wm. F. DeBerry, Oakland; 2nd., Howard Schlosnagle, Accident; 3rd, Wm. P. DeBerry, Oakland.

*Sweet Potatoes*—1st., Carl H. Smith; 2nd., Robert T. Williams, Salisbury; 3rd., Levin Evans, Hebron.

### ADULT COMMERCIAL

*Irish Cobblers*—1st., Roger Burtner; 2nd., Howard Burtner, Keedysville; 3rd., W. A. Walker, Mt. Airy; 4th., Foster Yost, Accident; 5th,. R. W. Burtner; 6th., Raymond Burtner, Sharpsburg.

*Any Other Early Variety*—1st., Wm. A. Walker, Mt. Airy; 2nd., Louise Burtner; 3rd., Edwin Burtner; 4th., Howard Burtner, Keedysville.

*Smooth Rural*—1st., Howard Schlosnagle; 2nd., Emmert Miller, Accident; 3rd., Mrs. W. A. Custer, Friendsville; 4th., C. W. Baker, Edgemont; 5th., Paul Miller; 6th., Lloyd Miller, Accident.

*Russet Rurals*—1st., W. C. DeBerry; 2nd., Robert DeBerry; 3rd., M. E. DeBerry, Oakland; 4th., John P. Speicher, Accident; 5th., C. W. Baker, Edgemont; 6th., Ralph Baker, Mt. Lake Park.

*Dakota Red*—1st, Wm. Cissil Simpson, Jr.; 2nd., Mrs. Wm. Simpson, Jr., Clarksville; 3rd., Howard Burtner; 4th., Edwin Burtner, Keedysville; 5th., George Buckingham, Marriottsville; 6th., W. Harding, Cambridge.

*Any Other Late Variety*—1st., D. T. Walker, Mt. Airy; 2nd., Paul Miller, Accident; 3rd., Robert DeBerry, Oakland; 4th., Paul Morelock, Westminster; 5th., John R. Jehle, Hyattsville; 6th., Elinor Morelock, Westminster.

*Sweet Potatoes*—1st., Carl Smith; 2nd., Carl Smith, Jr., Salisbury.

4-H CLUB, CERTIFIED AND COMMERCIAL

*Early Varieties*—1st., Roger Burtner, Keedysville; 2nd., Eugene Schlosnagle, Accident; 3rd., Waldon Burtner, Boonsboro; 4th., Morris M. Martin, Westminster; 5th., Clark Crawford, Keedysville.

*Medium Late Varieties*—1st., Eugene Schlosnagle; 2nd., Robert Miller, Accident.

*Rurals (Russet and Smooth)*—1st., Marvin Schlosnagle, Accident; 2nd., Cecil Sisler, Friendsville; 3rd., Junior Schlosnagle, Accident; 4th., Wilbur Thomas, Friendsville; 5th., Robert Miller; 6th., Richard Kolb, Accident.

*Any Other Late Variety*—1st., Stephen Moreland, Westminster; 2nd., Roger Burtner, Keedysville; 3rd., John R. Jehle, Hyattsville.

F. F. A. CERTIFIED AND COMMERCIAL

*Early Varieties*—1st., Clark Crawford, Keedysville; 2nd., Arthur Fouche, Adamstown; 3rd., Thomas Covell, Frederick; 4th., Roger Burtner, Keedysville.

*Late Varieties*—1st., Clark Kolb, Accident; 2nd., Roger Burtner, Keedysville; 3rd., Cecil Sisler; 4th., Wilbur Thomas, Friendsville; 5th., Clifton Link, Sandy Springs; 6th., Herbert Seabold, Accident.

# REPORT

OF THE

# Maryland Stockmen's Association

## NINTH ANNUAL MEETING

**January 12, 1938**

**Baltimore, Maryland**

President K. A. Clark of College Park, Maryland, in the President's annual address, opened the forenoon session of the Ninth Annual Meeting of the Maryland Stockmen's Association in the Lord Baltimore Hotel, Baltimore, Maryland.

### PRESIDENT'S ADDRESS

By K. A. CLARK

It is a pleasure to welcome all of you to the ninth annual meeting of the Maryland Stockmen's Association. There are only a few of us here now, but others are constantly coming in and it looks like we shall have a good attendance at our meeting.

I would like to go back over the past year and point out a few outstanding incidents. Among others, Joe Vial went to Europe horse hunting and wrote a fresh chapter in our Maryland livestock history. He brought back a Percheron stallion and three Belgian fillies for Maryland breeders. We had the finest set of shows this past year we have ever had in the State. One particular development which comes to my mind is a general increase in interest and in entries, and a vastly-improved class of horses at the horse shows. All the regular annual shows were bigger and better than ever. At Timonium, we had a vastly improved show: Hereford classes were provided and the Hereford men put on a very nice show. The Angus show was bigger and better than ever. The Baltimore Livestock Show was fully up to par due to the capable management and direction of Mr. Harvey and associates. I think the whole livestock show season has been a good one. During most of the year, feed prices were high especially in the middle west. In our own State we were more fortunate than in most sections because we had a supply of feed on hand and were able to produce about as usual in a livestock way. Reviewing the year's activities, I think we have had a very satisfactory and prosperous year.

I wish to appoint, at this time, unless there is objection from the floor, a nominating committee so that we may be able to pass on their report

before this morning session is over. I am going to appoint five on this committee: Joseph M. Vial, Chairman; Richard Riggs; Maguire Mattingly; Warren Tydings and Will Harvey, Jr. The committee will please retire and make up their report.

Mr. M. C. Sherman has been asked to serve as chairman of the beef cattle program this morning in the absence of Mr. McGregor. Mr. Sherman, as you know, has maintained a large and fine herd of beef cattle down on Bennett's Point Farm for many years.

MR. SHERMAN: The order of events on the program calls for the report of the Secretary-Treasurer, but that will be postponed since Mr. Vial is serving on the Nominating Committee. I am distinctly substituting here for Mr. McGregor and my main idea now is to turn this discussion to something really interesting. We have here on the program a talk by Mr. Litton which should be very interesting, indeed, so if Mr. Litton will come forward, his speech will be very much appreciated. I do not know of a man in this section of the country who is better known or more liked than Mr. Litton.

## AS I SEE OUR BEEF CATTLE BUSINESS

By KENNETH E. LITTON, Blacksburg, Va.

I have here a program of the meeting. I am looking on it for the time and since we are late in starting, and since your president disposed of his part in ten minutes, I should be able to dispose of mine in three. My subject as I see it is "As I See Our Beef Cattle Business". This topic contains so many different angles, so many different interesting things that it is very hard for me to decide on any one thing that might be of particular interest to you. Before this, however, I certainly want to compliment the livestock people of your state on their organization and on the interest and enthusiasm with which all groups are working together. Such teamwork is an essential part of a livestock program in any state. The real back-bone of the livestock industry is in the hands of the producers of those purebred animals that give the commercial man in turn something on which to work, and I again want to congratulate the purebred breeders in this state because I have had the pleasure of showing against them in several of the shows, and I also say it is a pleasure to be beat by them because if you are beat by something good, you do not mind it. Here in the East, and particularly in this State, we have a number of breeders and boosters who have made available some mighty good foundation animals such as any state could boast of. It would be hard to put too much emphasis on what these men are doing for several reasons: If they are doing their duty to livestock production in this state, they are attempting to breed and produce for you an animal that will do a particular job in the best and most economical way. If they are producing meat animals, the ultimate end is over the scales, into the hands of the packer and on to

the consumer, and the kind of animal he is trying to produce is the one that will best serve that end. I want to pay them a tribute and I believe that every person who is interested in the production of livestock from any angle—packer, consumer, etc., owes those breeders a vote of thanks. This means that that animal has been bred over a period of years to do that particular job better than any animal can do it. And here is another thing: It does not necessarily follow that every man producing livestock should have all purebred animals to work with, since very few of us are so equipped or have the time to put on those animals. We do, however, need and must constantly resort to these purebred breeders for sires for our herds of commercial cattle, horses, sheep, etc.

When the Baltimore Livestock Show started, we saw cold-blooded animals of all descriptions, with the boys trying to fit them for show. This year proved that it takes first good breeding before one is able to get anywhere in the game of showing animals.

This year our attention has been turned to soil conservation. I do not see how you can leave this out of a sound livestock program. I want to impress the necessity of this upon you further. What is a farm anyway? There are a lot of definitions and a lot of them that would fit, but the one I like is "A farm is a factory producing something to sell". You want to produce something that you can sell; consequently let us look on our beef cattle business from the standpoint of producing something to sell. Too many folks are viewing it on the basis of buying something to sell; in other words, using it for gambling. As long as we produce, we may be able to hold production costs at a point where we can do something with it. I believe that should really be the theme in the livestock industry. You have many instances of this type of success in your own state. You can use any example you want and see that it works on the basis of producing to sell rather than buying to sell; how much you can afford to expend on it and get something out of it. You have that type of beef production here in the State. A man may buy calves and keep them through to yearlings and sell them to someone who keeps them until two-year olds. In the meantime his competitor in the corn belt has produced and marketed about six sets of cattle. There is plenty of room for thought in this and plenty of room for application of better methods with our beef cattle program in the east. Of course, a feeding program enters into this, particularly in our state a grass feeding program, because we have a grass crop to market. In the place of a big, slabby-sided kind of steer, we want a big, thick-loined type of steer that will give us results. There are a number of people who have much to learn about the business of feeding. They should not attempt to practice on a good load of feeder cattle. You can take good feeder cattle and make a common job of it when nothing is known about feeding. Do I know what it takes to make a steer? There are a lot of things we can think about on that proposition and we can get a lot of help out of our Extension Service. We should know that the average

person would be a lot better off if he turned over the job of buying feeder cattle for replacement to someone who understands conditions and who can get the cattle for him with the best results. From your point of view as a livestock producer, nothing that you undertake is complete unless you begin at the beginning and go through to the end of it. I might be the best feeder in the world and still lose on my cattle because I might not know how to buy or have the opportunity to buy right. I might not know how to feed, or perhaps I might not know enough about the business to sell right. You have to have a complete program. In working together from that angle, particularly from the buying end of it, what we need throughout the whole country is a closer working relationship between the packer, consumer and producer. The packer is in between the two of them and he should be the agent for the producer. On the other hand, I am afraid instead of getting closer together, we get farther apart. You are the ones particularly interested. I would like to see us work together and forget about a lot of our little prejudices as a group of producers in working together to a common end, so that you as a producer will be able to get the best results. It is my personal opinion that people are usually open-minded about trying to do those things if you would all be a little more willing to help. I would like to see us working together rather than all divided, working toward a common interest in the things we have in this livestock program.

MR. SHERMAN: Gentlemen, Mr. Litton has certainly given us a very purposeful talk. He has covered points from the basis of the beef business along broad general lines. I was hoping he was going to tell us some of the secrets which enable him to come to the Baltimore Livestock Show each year with Club calves that take most of the ribbons. Now to get back seriously to Mr. Litton's discussion—he brought up the point of the appreciation on the part of some of the steer feeders to the purebred breeder in producing a high quality steer that can be fed to top the market. He also brought out the point of specific aims in feeding steers; in other words, instead of drifting along with whatever methods may be available at home, to really get down and figure whether you are doing the feeding business right or not. Then he emphasized the sale. He has brought up a thought that we should have some discussion on: We have Maryland turkey, Maryland oysters, etc. Why not Maryland beef?

We will call on another speaker on the program, then a bull discussion may follow. Mr. Bogue, as you know, comes from the west, a country somewhat different than ours, but he will probably have a number of ideas that can be put to practice in our state.

## A REVIEW OF RECENT BEEF CATTLE EXPERIMENTS

By ALAN BOGUE, College Park

By adapting the results of experimentation to the beef cattleman's needs, Experiment Stations and Agricultural Colleges lay the foundation for progress in our beef cattle work. It is true that the results on some single experiments are rather misleading, but the sum total of the results secured from the vast number of experiments run each year have brought out the desired results with accuracy. The Experiment Stations have paid considerable attention to the market value of cattle and most experimentation has been done with steers. Whether or not the cattle producer and feeder makes use of the conclusions reached by experimentation are up to him. Oftentimes, we find certain individuals availing themselves with information and others noticing the progress made, change their methods. Time, itself, brings out many results that are of vast influence on the cattle industry. Of course, if by experimentation we can alleviate the disastrous results that time often has on the cattleman, we are going to progress at a faster pace.

The chief change brought about in the last decade is the fattening of animals at a younger age. If every one of you could glance over the pictures of the Grand champion steers at the International Livestock Show since 1900, you would realize that change. The Grand champion in 1902 was 38 months old, and weighed 1870 pounds, while the Grand champion steer this year was 20 months old and weighed 1135 pounds. The consumers of beef have demanded smaller cuts because of smaller families and more people being employed in office work. Experiments have shown that calves are more efficient converters of most kinds of feeds than older cattle. In 16 trials run at the various midwest stations, the following conclusions have been made:

Average of Sixteen Trials

| | Calves | Yearlings | 2-yr. olds |
|---|---|---|---|
| Daily gain | 2.19 | 2.26 | 2.40 |
| Cost of 100 pounds of grain | $ 9.14 | $10.98 | $12.07 |
| Initial cost | 8.78 | 8.21 | 8.24 |
| Selling value | 10.32 | 10.08 | 10.14 |
| Return per steer | 9.39 | 4.08 | 3.25 |

In some localities, however, a different feeding pattern than that followed in the cornbelt must be used. If considerable silage and rough feed is to be consumed, of course, the older cattle will be the most efficient converters. Oftentimes, the market in a particular locality demands that a feeder feed a certain class and grade of cattle. The feeding trials of late years are emphasizing the fact that more margin is needed in feeding two-year-old steers, because of their more expensive gains. The Iowa Station has made this statement: "Steer calves can be finished in 240 days, yearling steers in 180 days, and two-year-old

steers in 120 days." The two-year-old steers are more of a speculative proposition than calves or yearlings.

The old controversy of whether we should feed heifers or steers has been well taken care of this past fall by the cattle producer keeping his heifers for replacements or to increase the size of his herd. It has been found that it takes sixty days longer to get the desired finish on steer calves than heifers. Heifers weighing over 900 lbs. have been discriminated against on the market for being too wasty and often pregnant. The best time to sell heifers is when they weigh from 700 lbs. to 750 lbs. The Minnesota Station observed that lots of mixed steers and heifers gained just as well as when separated. For the first 150 days results have shown that heifers will gain as rapidly as steers, but after that the steers will surpass the heifers. In England there is no discrimination against heifers of any weight on the market.

The cattle feeder is often at loss to know what class and grade of animal to feed. The University of Minnesota has conducted some trials in an effort to answer this question. They concluded that from the standpoint of profits the trials showed little difference for choice, good, medium, or common steers. The rate of gain for each lot showed very little difference as to grade of steer. It was also concluded that when steers were picked uniform as to individuality they secured less spread in the market value, but did not secure the same uniformity in efficiency of gains. Seemingly, the correlation of selecting a correct typed feeder and that feeder be the best gainer is very remote. In other words, we have as good gainers in our common grade of steers as in our fancy selected grade. The Iowa Station points out this fact that the gain one secures on a choice steer brings more than the same number of pounds on a common steer. This means that the man feeding common cattle must have a larger margin. It has been conclusively shown that if a man is a cattle grower, it will pay him to deal with the best grade and if a man is both a grower and feeder, he should be producing the best grade.

Should I let these steers go to market this week or should I wait until next month is a question that confronts each feeder. Excessive finish is not profitable. R .M. Watkins of Swift and Company made this statement when addressing the 1936 Society of Animal Production meetings, "We have found that the distribution of fat is just as important as the fat itself in the finish of a steer." The average consumer today does not prefer an excessively fat beef steak. In a Missouri experiment, three steers were slaughtered and their carcasses compared. One steer was slaughtered before fattening and his entire carcass was analyzed. Another was slaughtered when he weighed 1266 lbs. and graded as choice. The third steer was fed until he wegihed 1805 lbs. and was extremely fat. As compared with the steer slaughtered before fattening, it was found that the 1266 lbs. steer had stored in its body 152.6 lbs. lean meat and 151.7 lbs. fatty tissue. Compared with this 1266 lb. steer, the 1805

lb. very fat steer had stored 255.5 lbs. more fatty tissue and only 89.5 lbs. more lean meat, indicating that the longer a steer is on feed, the less lean in proportion to fatty tissue he will have. The trial furthermore showed that the cost of putting on this excessive finish was expensive in proportion to the cost of securing a moderate desired finish. Experiments have shown that calves and yearlings can be held for a more desirable market much easier than two-year-old steers, the reason being that calves and short yearlings grow as they finish.

Not much work has been done to determine the efficiency of a beef cow. The pounds of beef by way of calf that the beef cow produces in 365 days is really her measure of efficiency. You who are owners or managers of beef cattle herds know that you have certain cows within your herds that produce the best individuals. You also have identified certain cows that produce calves that are good gainers. It is in this way that the herd owners and managers conduct their own experiment. The U. S. Department of Agriculture is now conducting an experiment to measure performance in beef cattle by weaning calves at 252 days and slaughtering at a constant weight (900 lbs.). They have found correlation between average daily gain and economy of gain for the entire period from birth to slaughter. The performance of a calf from birth to weaning has not been very closely correlated with his performance from weaning to slaughter. In examining the carcasses it has been found that the edible portion of the carcasses produced by the progeny of one sire exceeded that of the progeny by another sire by a very slight margin. This conclusion might be a successful way to measure performance in beef cattle.

Numerous experiments have been run to determine the most profitable kind and amount of feed to feed cattle. It is true that a steer can be finished to prime condition on several kinds of feed depending on what feed is available. However, there are certain characteristics that have been brought out by experimentation with our principal feeds that every cattle feeder needs some knowledge of. In most grain-growing sections the cereal grains are the chief concentrates fed to beef cattle. Corn is recognized as the chief grain for fattening cattle. Price and availability will be the chief factors in deciding what grains will be used. Oftentimes it is necessary to combine some protein supplement to balance the ration.

When pigs follow beef cattle to consume the corn grains that pass through the animal undigested, corn is most profitably fed as ear or shelled corn. According to experimental results the older the steer the more feed that passes through undigested. If the cattle feeder has no hogs, it will pay him to grind the corn rather coarsely. The Missouri Station has shown that steers will gain faster on ground corn but that this gain does not take care of the extra expense involved in grinding. Grinding the entire ear of corn has become popular for starting cattle on feed and for feeding calves. The University of Minnesota has run

trials to evaluate the practice of feeding corn-and-cob meal to calves. They found that corn-and-cob meal did not produce the finish that shelled corn did, but that the corn-and-cob meal lot started on feed easier and were easier to keep on feed thus producing more gain. For older cattle, the practice of feeding corn-and-cob meal is not so feasible because the cob is too much of a filler and as a result the steers will not consume as much grain. White corn lacks the vitamin A content that yellow corn possesses; however experimental work shows that if alfalfa hay is fed with white corn an ample amount of vitamin A will be provided in the ration. The high content of starch and oil that corn possesses plus its palatability make it America's number one feed for fattening cattle.

Barley is an important feed for beef cattle in western and northern United States. In twenty-four experiments in which ground barley has been fed as the only or chief grain in direct comparison with corn, the average gains of the barley-fed cattle have equalled those of corn-fed cattle. Ground barley also fully equalled corn in these experiments so far as the amount of feed required per 100 lbs. gain by cattle was concerned. Recent trials have shown that the selling price of barley-fed cattle is a little lower than for corn feds. Barley must be ground or rolled to secure the most desired results. The Iowa Station says that barley is worth 88 to 90% as much as corn for fattening cattle.

Wheat has its most value as a cattle feed when it is fed in combination with corn or oats. Tests have shown that it is hard to keep cattle on feed when feeding wheat. Ground wheat is not as palatable as whole wheat, but is used far more efficiently by the animal. If the best quality more of cheap concentrates to produce 100 lbs. of gain, than corn.

Oats is a rather bulky feed and recent experiments have shown that it has more value for young cattle than older cattle. The Minnesota station obtained very good results when oats constituted 20% of the ration. Cattle fed out on oats invariably sell for less because they lack finish. Oats has a distinct value as a feed for young breeding stock. In a very recent experiment at Oklahoma, it was found that a ration of ½ ground oats and ½ cane molasses was practically equal to corn in producing gains on steers and required only 25 lbs. more hay and 39 lbs. more of cheap concentrates to produce 100 lbs. of gain, than corn.

Cane and beet molasses are fed extensively in the sugar cane country of the south and sugar beet territory of the west. Molasses is commonly used as an appetizer and sometimes where economical enough, may be substituted for corn. Experiments show that it is worth 75% as much as corn in fattening steers, when fed liberally.

Recent investigation is revealing the fact that beef cattle do not need nearly as much protein as was once recommended in the old feeding standards. Calves require the most protein because protein is needed in growth. The nutritive ratios for beef cattle of different ages are: Calves 1:6.5 to 1:7.3; yearling 1:7 to 1:8; and two-year-olds 1:7.5 to 1:8.5.

Cottonseed meal or cake is used more extensively for beef cattle than any other protein supplement. Linseed meal is used extensively in the northern states and produces a bit more finish on steers. The Iowa Station has determined the value of linseed as compared to cottonseed meal. They found that linseed meal is a safer feed and that it was more valuable for calves. It was found that in dry lot feeding cottonseed was worth only 75% the value of linseed meal, cottonseed cake has a distinct value when used with prairie hay for wintering cows on the western range. The fact that there is much more cottonseed meal available than linseed meal makes it a far more economical feed. Soybean oil meal and whole soybeans are high in protein and are being used to some extent as protein supplements for beef cattle. A recent Indiana trial showed that soybeans were equal pound for pound with cottonseed meal. Soybean meal is not so palatable and new processing methods are needed to improve its quality. Protein supplements are especially needed in rations where corn and a non-legume hay are being fed.

Corn silage has been a deciding factor in reducing the cost of beef cattle production. Experiments have shown that it is a valuable feed for breeding cows as well as fattening steers. Corn silage is very palatable and in various experiments has shown very good return when fed in a corn and alfalfa hay ration. Silage is low in protein and calcium so one must feed more protein supplement in a silage ration. The Kansas Station found that when corn silage was fed as the only roughage with corn plus ground limestone plus protein supplement very good results were obtained. Corn silage has proven very useful as a feed for plain, heavy cattle. A silage finish on cheaper grades of cattle returns the most money.

With our soil conservation program, we have had an increase in pasture and roughage acreage. The Indiana station has brought out these facts:

1. As the quantity of grass and roughages increases, the number of cattle produced will also increase.
2. With more grass and hay available the supply of stockers, feeders, and grass fat cattle gains in relation to finished cattle.

Alfalfa and clover hay are about on a par as to value as feed for beef cattle. Recent experiments have shown that timothy has a low value in comparing it with alfalfa for calves. Timothy is low in protein, so a protein supplement is very necessary when such is fed. Soybean hay differs very widely in value depending on how it is cured. In some experiments, it has been too laxative a feed for fattening cattle. The Kentucky Station shows that good quality soybean hay is equal to clover hay in value.

The consensus of opinion taken from various experimental results is that when beef cattle are fed a legume hay plus a protein supplement, there will be no lack of calcium or phosphorus in the ration. In a non-legume ration, 0.1 lb. of ground limestone per day will supply the calci-

um and in a low phosphorus ration 0.1 lb. of bone meal will supply the phosphorus.

In these remarks I have tried to cover the main factors brought forth in recent beef cattle experiments. It should be realized that most of the material has been gathered from institutions in the mid-west where most of our recent beef cattle experiments have been carried on. However, most of the ideas presented are adaptable to our beef cattle production in Maryland.

MR. SHERMAN: This talk has brought up a great many questions that can be discussed by our members here.

We will now turn to a real practical farmer. Mr. Ranneberger has fed from 75 to 100 steers annually for the past five years. I wish to introduce Mr. Ranneburger:

## MY FIVE YEARS FEEDING CATTLE

By LEE RANNEBERGER, Adamstown

Fellow Members: The President and I have been friends for a long while and why he got me into this, I do not know, but there seems to be nothing to do about it.

About five years ago, I decided that I wanted to feed steers. About the hardest thing I had to learn was how to feed. We would get them up to about where we thought they ought to be and the trough would be clean. We would think they were not getting enough to eat and the next thing we knew we would open the door to let them in and they would come in with their heads down and not caring whether they got in or not. In fact, a couple of them didn't get in at all. I had a time learning to keep them just a little hungry, and I found they did much better by keeping their appetites keen. We haven't bought the best grade of cattle as a general rule. We have used a medium class or grade for, being green in the business, we thought it better to practice on the cheaper kinds so that if we suffered a loss we might not lose as much as with the higher priced cattle. One year we had white-faced cattle and we did rather good with them, did not make a lot of money, but did fairly well. Another thing I have learned in the five years I have been in the business: the tamer the cattle, the better. When we unloaded a shipment off the car one year and started to drive them home, there were several that jumped over into the yards of my neighbors. We got all of them but one—a white-face. It was about 2:30 in the afternoon when we got him back. He ran in everybody's yard and even ran over a man (we thought we were going to have hospital expenses). We finally got a colored fellow to help us. He went over to the steer and stopped; the steer was facing him. The fellow stepped in a bumble bee's nest. I said "Get him out of there". He replied, "I can't; there are bumble bees behind me and the steers in front of me". We finally got him out. However, today if I go in the feed lot and make a quick move, that steer

is ready to run. My experience is that the white-faced steers are a little more inclined to be wild than the reds and I think that they do much nicer if not so wild. We feed ensilage and a supplement feed of 47% protein which we have been feeding for several years. Some years we make something, but this year from the looks of prices now, it seems as if we will not do much with them. This year we no not have much hay to feed them for roughage, so I am feeding them about all the ensilage they will take and about 10 lbs. of ground corn. As I say, I am trying to learn how to feed them and to sell them. I was a whole half-day trying to sell them the first time. I knew the man wanted them and I was trying to get the last penny out of him. He said I was stubborn.

We feed about a hundred head a year. We try to make two or three feedings out of them. We put them on about the first of September. Our intention was to get rid of them about the first of December. However, the price would not permit this and we still have them. I do not know whether I have learned very much about feeding cattle, but I am willing to learn, getting information from people who do know about feeding.

From what I have said about what I have learned, I leave it to you gentlemen: "Can you learn an old dog new tricks"?

MR. SHERMAN: Thank you, Mr. Ranneberger. This completes the talks on this morning's program. While these gentlemen have been talking, I have, myself, thought of many questions and I know that you have too, so we want any of you who have questions in mind to ask them and we will have a short discussion here. I am sorry to say that Mr. McGregor, who was the proper chairman on this program, has not yet arrived. His car broke down, but he will be here tonight.

Now as to what might be discussed: We had Mr. Litton's talk on his way of looking at the beef cattle business, bringing up many important things; we had Mr. Bogue's talk on expermiental feeding, and by the way, it was very refreshing to hear Mr. Bogue deliver his conclusions. Then we had Mr. Renneberger's very nice talk about his experiences, and I am sure there are questions which occur to you in connection with all these talks, so let's whoop it up and get a good discussion:

FRED ERNST, Clearspring: Mr. Chairman, I would like to ask Mr. Bogue a question about roughages used as silages.

MR. SHERMAN: That is roughages used in connection with silages?

MR. ERNST: No, I mean roughages used as silage, other than corn.

MR. BOGUE: I came from a place where they used anything—sunflowers, thistles, etc. for silage. They have, for instance, used soybeans and used molasses with them as silage to get a very palatable silage. Sorghum silage is very good. Grain sorghum has a definite value in fattening cattle. The grains themselves—oats and barley, have not proven very successful. They have used some alfalfa silage, but alfalfa is not as satisfactory to feed in silage as cured hay. You would be better off to apply your molasses to your roughage.

JOHN ROOP, Linwood: I would like to know if we have any data on apple silage.

MR. SHERMAN: Well I haven't, but maybe some of you have. Mr. Bogue, do you know anything much about it?

MR. BOGUE: I do not know much about it, so will refer you to Mr. Clark.

MR. CLARK: Most of us, I fear, know more about apple jack than we do about the apple pumice. This has been used for ensilage, and if my memory serves me correctly, it is supposed to be worth about 30% the value of corn silage. It is low in value, and of doubtful benefit for feeding cattle.

DAN WIGHT, Frederick: May I ask Mr. Bogue a question? I have read somewhere where there is more additional protein in an acre of alfalfa silage than an acre of alfalfa hay. Is this true?

MR. BOGUE: It is possible that there is more protein from an acre of alfalfa silage than from an acre of alfalfa hay; however, that does not make it worth any more. I would rather see it fed as alfalfa hay than put in silage.

MR. SHERMAN: While on the silage subject, grass chopped and molasses necessary to secure fermentation added, is making some headway. I wonder if there is anyone in the room who has tried that.

MR. BOGUE: I might give you a little experience. I have seen them cut corn stalks, put them in a silo and add molasses. They have been able to get by in that country by using dilute molasses on poor quality roughage making them more palatable to feed to rough cattle in the winter.

MR. SHERMAN: I think there is a little more in it than Mr. Bogue seems to think. For one thing, it reduces storage from 400 cu. ft. to 50 cu. ft. and does not have to be cured. If there is anyone else here who has had some experience, we will be glad to hear about it.

MR. LANE, Queen Anne's County: We have two silos in use for dairy cattle. My reason for trying it is that we cannot feed the soybean hay because it is too dry, so we chopped it and put it in the silo with about 75 lbs. of molasses and found it very succesful.

J. W. ROOP, Linwood: Can sorghum silage be handled in the same way?

MR. SHERMAN: Yes.

MR. CLARK: I wish to raise a point mentioned by Mr. Litton. He mentioned the difficulty many cattlemen have in buying their steers for replacement purposes. Those of you who have been up against it in buying feeder cattle in this territory will probably profit from hearing Mr. French Miles, Representative of the Eastern Marketing Association. I think Mr. Miles can tell you a little about this.

MR. MILES: This question of buying feeder cattle is always a problem with the beef cattle producer. We have had to meet that problem for feeders who say to us, "If you expect to sell our fat cattle for us,

you must select our feeder cattle". This year we brought into this district some 8000 feeder cattle. These cattle were selected by top-notch cattlemen of the west. We have field men placed throughout the west to buy these cattle. Most of our orders were filled by these men who know these cattle and know where they come from. Out of 8000 cattle that we purchased, we had one load of 26 cattle turned down and I think that is a good record. This is the problem: So many of our feeders in this territory do not know the grades of livestock. What we buy for good cattle in the west are choice cattle here. We purchased a load of cattle for Mr. Jones and his neighbors said they were good cattle. They were not good cattle when bought and were not good cattle when they arrived. A number of our cattlemen have felt that we have been able to render them a service in this instance. A problem we have always had is that people in this territory do not know their grades of cattle. Maryland has in a small way been able to educate her people on what grades of cattle are.

In West Virginia, the boys working in the college have tried to organize feeder calf sales, and the Virginia boys have carried on a sale or two with good results. Just what more we can do to help the Maryland feeders I cannot say. We are in a position to put you in touch with the best feeder cattle buyers in the west. We have men out there who know where they are and we will be glad to work with you men any time and help you locate what you are after in the way of feeder cattle.

MR. SHERMAN: Thank you, Mr. Miles. There is a gentleman here I want to call on because he is interested in beef cattle from various angles: He has just purchased and brought into this state the International Grand Champion Hereford bull.

GENERAL RIGGS: I am very young as a cattle breeder. I have always been interested in livestock matters. Some years ago, I went into the swine business and was interested in helping to produce better swine in the State. Just now my interest is in improving cattle in Maryland. We have brought in a fine bull. I must say it was very tempting, when we found we could get the Grand Champion, to bring him back to Maryland. Last year we had quite a successful State Fair. We increased the premiums for all good kinds of stock. We improved the beef cattle classes and the result was a very good show of Angus and the first of Herefords. I might say that this year the directors have decided to put on increased premiums in both beef cattle classes and horse classes and we hope for the cooperation of all in making the next Timonium Fair an even more successful one.

MR. SHERMAN: The time is getting short so I will turn the meeting over to Mr. Clark.

MR. CLARK: Now let us have a report of the Nominating Committee.

RICHARD RIGGS: Mr. Clark, the Nominating Committee in their decision have tried to get the most successful breeders of the State engaged in the various livestock fields, and have the following report to make:

President: S. O. Jones, Ellicott City, Md.
Vice-Pres.: George Bailey, Earleville, Md.
Sec'y.-Treas.: Jos M. Vial, College Park, Md.
Ass't. Sec'y.-Treas.: Alan Bogue, College Park, Md.
Executive Committee: K. A. Clark, College Park, Md.
W. R. Harvey, Baltimore, Md.
D. E. Wight, Frederick, Md.
J. Maguire Mattingly, Pearson, Md.
M. C. Sherman, Queenstown, Md.
Delegate to Farm Bureau Federation: James Clark, Ellicott City, Md.
Delegate to annual meeting: Edwin Warfield, Woodbine, Md.

The report, as made, was accepted and unanimously carried.

MR. CLARK: It is with great pleasure that I introduce our new President, Mr. Jones.

S. O. JONES: It is with a great deal of pride that I accept the honor and the opportunity for service which you confer upon me in making me your president for the coming year, and I shall do all in my power to carry on for the Maryland Stockmen's Association as Mr. Clark and the other officers of the Association have done in the past year. Thank you.

MR. CLARK: I am now going to call on Mr. Bailey to stand and be introduced as your new Vice-President.

Mr. Joe Vial is next on the program with his Secretary's report.

MR. VIAL: My report, too, is very brief. We have in the treasury as of this date a balance of $76.25. This is quite a come-down from that of previous years, but the Maryland Stockmen's Association turned over to Mr. Harvey as Secreatry of the Maryland Livestock and Meat Council $250.00, so our treasury is rather depleted. We did this with the feeling that we should cooperate with this organization for such a worthy purpose. We have had two members who paid their 1938 dues long before anyone else. Of these two, Dr. Patterson was the first as usual to send in his dues. It is a good start-off.

We have had two tours during the year and the committee certainly did themselves proud on these tours. They were in Baltimore and St. Mary's Counties and hospitality reigned supreme. We were also entertained at the Heath Steel farm which, coming so closely on the heels of the other 'spreads', kept me for one from doing justice to it. It was suggested at the meeting last year that we have more of these tours. It was hard to formulate plans however, for dates when we could get together, but I hope we can get together this year for I think it did us a world of good to go to the other fellow's place and see his way of doing things.

MR. CLARK: You have heard the Secretary's report. What is your pleasure? It was moved and seconded that the report be accepted as read and motion duly carried.

J. D. ROOP: I would like to know more about this appropriation of $250.00. I do not seem to know about this.

K. A. CLARK: For several years, there has been feeling abroad that a larger, stronger, more active association is needed for the purpose of doing some of the things that Mr. Litton just mentioned; namely, that housewives, consumers, etc. should be more familiar with the producer's viewpoint. We also felt that in this way we could help to secure certain, much-needed legislation. The question of financing came up and practically all livestock organizations contributed to the funds of this organization of which Mr. McGregor is Chairman, and Mr. Harvey, Secretary. It is called the Maryland Livestock and Meat Council.

Before we break up for our luncheon period, let me announce that we have an interesting banquet program arranged for tonight, with a little lightness provided, and I hope those who attend will be well entertained. This will take place at 6 P.M. in the main ballroom of the hotel. It takes about 200 people to fill that room. Mr. William H. Cunningham is going to be chairman of the draft horse section this afternoon. Those who know him will agree that the "old grey mare *will* be what she used to be'.'

I would like to take this opportunity to introduce K. C. Ikeler. Mr. Ikeler, as you know, is Head of the Animal and Dairy Industry Section of the University of Maryland.

MR. IKELER: Mr. President, the time is short and interfering with feeding these men; therefore I want to say that I have enjoyed talks presented at this meeting this morning. I think what has been said regarding the strengthening of the livestock exhibits in the State is very interesting. I am sure this organization can do a great deal toward this. The Maryland State Fair Board is right behind all the worthwhile agricultural exhibits made in the State of Maryland. It is their purpose and desire to encourage these exhibits; therefore, I think all you have to do is to keep on your path and do not hesitate to communicate with our staff at the University and others of wide experience in the State of Maryland.

MR. WIGHT: I think if you will call on Mr. Rucker, he can give you an interesting report of prices for some cattle recently sold from Cremona Farm.

MR. RUCKER: Out of 65 head, 45 steers made an average of $157.20. We have not yet heard from the last load we shipped to New York.

MR. CLARK: If there is anything else any of you want to get off your chest, let us hear it; if not, we will have lunch and report back here at 1 P.M. for the draft horse, sheep and swine program this afternoon.

## Afternoon Session

MR. CLARK: During the past year this State has imported horses from Ohio, Pennsylvania, North Dakota, South Dakota and other states as well as Canada, France, and Belgium. Mr. Rieman imported a reg-

istered Suffolk stallion; Mr. Schluderberg imported three belgian fillies and Mr. Johnson brought over a Percheron horse. Mr. Bedford imported a pair from Canada. These are signs of increased interest in draft horses. We have had bigger and better shows and more of them. During the past year grain was very high and tractor salesmen took advantage of the situation in many sections of the country and they traded tractors to farmers, using horses for down payments in a great number of cases. As a result of this, there was a bad disturbance in the regular commercial horse market. Many of these horses were dumped on the market at a loss of $35 to $75 per head. Some predict that tractor salesmen will be more careful in the future with horse trade-ins, inasmuch as they got their fingers rather badly burned this year. Now, we have our chairman of the draft horse section, Mr. William Cunningham.

WILLIAM CUNNINGHAM: I always considered Mr. Clark a very good friend of mine, but since he has put this burden on me, I look upon him a little differently. It looks as if he is shoving his duties off on someone else, and I do not feel qualified to accept them.

I think we have a subject to talk on this afternoon that is superior to any other line in the livestock industry—the draft horse. The sporting horse would not have much of a time if it were not for the draft horse to till the ground and produce feed for the sporting horse to exist on. I see some real Percheron and Belgian breeders here today. I think we all should go along hand in hand and help each other, and I hope to live long enough to see a pair of registered mares of some breed or other on every farm in existence, and I certainly would help to further such a cause. I think we are importing too many horses from Belgium and France. They do not buy anything from America and we have just as good horses here as they have, and we should protect our own market. I think we ought to put a heavy duty on imported horses. I started in with Belgian horses about 31 years ago and have had success with them. I have had some very hard jolts, but I think they were a benefit to me in the long run. If a man has nothing but prosperity in every move he makes, he will get beside himself. I have never been sorry that I selected the breed I did, and no one has ever heard me say anything against any other breed. I have the pleasure to introduce to you Mr. Earl B. Krantz of Washington, D.C., who will give you a real talk on draft horses.

## DRAFT HORSE INVESTIGATIONS

By EARL B. KRANTZ
U. S. Dept. Agriculture, Washington, D. C.

Mr. Chairman, Mr. President, Members of the Maryland Stockmen's Association, it is a real pleasure to be with you today.

Before considering the experimental work that has been done with

horses, I wish to call attention to the importance of this great industry. In this day and age of automobile, tractor and truck, old Dobbin is not so much in evidence as before this modern age. It is true that the horse has largely been displaced on the road and that the tractor has relieved the horse of many hours of extreme drudgery under difficult conditions. It is true that we do not find as many horses and mules in the United States as ten or twenty years ago. But we should not forget that the few more than sixteen million horses and mules on farms of the United States on January 1, 1937, had an estimated aggregate value of over a billion seven hundred million dollars, and furthermore that this valuation was greater than the valuation assigned to either beef cattle, or of milk cows and heifers two years old or over, and that it was twice the combined value of hogs and sheep.

Few of us stop to think that the valuation of the eighty-one thousand head of horses on Maryland farms is over ten million dollars, that the twenty-eight thouasnd mules have a valuation of over four million dollars, and that the combined valuation of these work animals almost equals the combined valuation of the State's dairy and beef cattle, according to the Crop Reporting Board.

Perhaps most of us forget the importance of the draft horse because his use is a part of a major line of crop or other livestock production. The horse, however, is found upon almost seventy-five per cent of all farms. He is found on nearly as many farms as have cattle, many more farms than have hogs, and roughly about eight times as many farms as have sheep.

Furthermore were an estimate to be made of the thousands of tons of hay and grain marketed through livestock annually, an appreciable part would be found to have been consumed by horses and mules. True this consumption goes in the production cost of some other crop, but the most important income that we obtain from horses and mules is the millions of hours of work done by them.

While the Bureau of Animal Industry initiated its first horse breeding project about thirty years ago, the field of research with horses and mules is still more or less virgin territory. Work done by the Department has largely been with light horses, chiefly Morgans, and to a limited extent with Standardbreds and Thoroughbreds in the West.

While I know this group is primarily interested in draft horse investigations, I want to refer briefly to what has been accomplished by the Bureau in its work with Morgan horses at the United States Morgan Horse Farm, Middlebury, Vermont. During the past thirty years, the Bureau has not only conserved and perpetuated the best of the Morgan breed, but has been instrumental in evolving an outstanding saddle type, largely within the confines of this breed, which was fundamentally a "cobby" type of road horse with short neck, flat withers, and trappy action. Today the animals in this stud are of a better type for saddle use with longer necks, better backs and withers and more flexibility of

walk, trot and canter. This improvement in type has been obtained without sacrifice of the meritorious qualities always attributed to the Morgan, especially feet and legs, stamina, easy keeping qualities, good temperament and disposition. A point most important to breeders, whether of draft or light horses, is that soundness within this stud is largely dominant. Seldom within recent years have we had to contend with jack, or ringbone, a splint now and then being the chief thing that we have had to correct.

Whether or not the blood of this American breed, which had been so diluted and scattered in the latter part of the nineteenth century, would have been conserved by private breeders, is a question, for the number of breeders was so small. Credit must be given to the Department, however, for the improvement. Moreover the value of this department has been recognized by breeders, if the wide demand for stock from the stud is an indication, for animals have been distributed to nearly every state in the Union, as well as to many foreign countries.

For similar improvement in draft horses, credit must largely be given to the studs of you private breeders and colleges. If you will recall the horses of twenty and thirty years ago, and compare them with the type of today, consider the generally clean hocks and hoof heads of today, you will grant the truth of that statement. You draft horse breeders of Maryland and neighbors of Virginia and Pennsylvania are to be congratulated in having had a part in that breed improvement. You have continued to have premier studs and produce outstanding animals. You have purchased or developed improved stock as needed, and are still doing so. You have been actively organized and doing good work.

The draft horse breeders of the United States are today producing as good stock as are foreign breeders. I was fortunate a year ago in seeing the "Black Horse Ale", stable of famous Percheron stallions at Montreal, Canada. Over fifty head of good stallions are being used in this great project for the improvement of horses in Canada. Many of those stallions were purchased in the United States. On the same trip we went on up to Mr. Arnold's at Grenville, Quebec, who at that time had several hundred Belgians and Percherons in his sale stable. We picked out a grand young Belgian. One of our party inquired as to his breeding and price, and mark this, that young stallion was one that Mr. Arnold wished to retain for his stud sire and show horse, and he was bred in Michigan.

Ten years ago, with the establishment of the United States Range Livestock Experiment Station, draft horse work was initiated by the Department with a small band of western draft mares and a purebred Belgian stallion. This work has been largely confined to colt production studies. Good grade draft colts fed out as weanlings to an average of nearly a thousand pounds at a year of age weigh less, however, than fifteen hundred pounds at four and a half years under range feed. These data therefore show that average western range methods are not

sufficient to produce an animal suitable to compete with the midwest producer for the eastern trade. Some most interesting data for the western producer, however, has been obtained.

Work of a more fundamental type was initiated two years ago in a cooperative project with the agricultural experiment stations of Tennessee and Mississippi pertaining to mule production. The part that the Department plays in this agreement is to initiate work pertaining to physiology of reproduction. This phase of the question is basic to horses and mules. It is being studied in cooperation with the agricultural experiment stations of Missouri and Montana, and carried on largely at the United States Range Livestock Experiment Station, Miles City, Motnana. Both grade draft and light mares are used in this project.

Preliminary results have been reported in the Annual Report of the Chief of the Bureau of Animal Industry, but there are two or three items that I want to call attention to as bearing upon the low-50%-colt production generally obtained about the country.

1st—While the average oestrus or period of heat was 5.3 days in length, the range was from one to twenty-seven days. We all know that the mare that remains in heat is a difficult mare to settle to foal and why shouldn't she be? External indications within this long period show in no way whatsoever the time of ovulation. It is important that time of probable ovulation may be known prior to ovulation, just prior to which breeding should take place.

2nd—While the mean interval between parturition and foal heat was 7.25 days, this period varied from two to twelve days.

These facts are not particularly important for the breeder who has means of trying regularly, watches his mares between such dates, and is a real horseman, but to the average farmer, who may take time to have a mare or two bred, and perhaps try back once or twice, it is important, and one of the reasons for low colt production. The common practice is to breed on the ninth day following foaling. Is it not important that a more accurate basis as to the right time to breed be obtained? What about the mares that come in heat before the fifth or sixth day and go out in two or three days, or those that come in after the ninth day? Is it surprising that trying such mares back on the eighteenth or twenty-first day after the ninth would show them out of heat? The stallionaire suggests that they were safe in foal when as a matter of fact this period was not even the time when they should show to be in heat.

It is estimated that fifteen to twenty per cent of mares now lost their foals after conception. To what is this due? Does it go back to vitality of egg, or vitality of sperm? Is it inheritance, nutrition or management? Why should we know? There has been little work upon it. Right now, we are attempting to obtain some basic data upon fundamental conditions, and if possible find a way towards a consideration of

the relationship between various nutritional or other factors to fertility levels. These fundamental studies are necessary before a consideration of methods of increasing conception and increasing the number born.

Work reported on the Hanovarian horse indicates that the fertility in stallions varies with individuals, and that fertility is inherited. From private work, Dr. C. A. Caslick, famous veterinarian of the Clairborne and Ellerslie Studs of Mr. A. B. Hancock, in a most interesting report at the recent meeting of the Horse and Mule Association at Chicago, pointed out the importance of proper care, feed and management of both stallions and mares to increase fertility. Is there not sufficient evidence to believe that possibly both genetics and nutrition enter not only into growth and use but even into low fertility?

Paper after paper, report after report, present the importance of a consideration of minerals and vitamins. A most interesting recent paper was also given at Chicago by Dr. Robert L. Humphrey of Mountville, Virginia. He reported on his observations relative to improved results credited to increasing minerals and vitamins in rations. There are other demonstrations that could be cited, but so far as experimental projects dealing with the feeding of minerals and vitamins to horses are concerned, only a few state stations have attempted minor work and very few experiments deal even with the most simple of feeding questions.

In Russia it has been reported that stringhalt among Orlov trotters is inherited only within definite blood lines, and only when it is found on both sides of the pedigree. In other words based on a monogenic basis. Is there any reason to believe that some simliar inheritance is not the controlling factor in other unsoundnesses that are causing thousands of dollars of loss annually to farmers.

A need for research on moon blindness was recently indicated by a comparatively small group of Thoroughbred breeders, this idea was bound together by the Horse and Mule Association of America, and today we find a definite step being made for a coordinated study by a number of institutions, including the University of Kentucky, Ohio State University, Pennsylvania State College, Bureau of Animal Industry, Washington, D. C., Army Medical Center, Washington, D. C., and the Gorgas Memorial Laboratory. It is interesting to note that the personal impressions of Dr. Herbert C. Clark, Director of the Gorgas Memorial Laboratory, who made a preliminary survey of investigations, were to the effect that the disease is apparently greater in farm animals than in Thoroughbred and Standardbred animals. Yet it was the action of the few Thoroughbred breeders that started the work towards this coordinated research. This study upon periodic opthalmia is most important. Different theories are held as to its cause. Experience after experience can be cited that give field for thought.. For example, just why, during the past six or eight years, have we not had a case of periodic ophthalmia at the Morgan Horse Farm, even though cases are found on neighboring farms and even in our own stud in former years.

Is it possible that there is a genetic or a nutritional factor, possibly associated with the virus theory? It is an age-old problem, a much needed study.

It is not only the acute disease that causes thousands of dollars of loss to farmers annually, but also the few dollars loss here and there caused by faulty breeding, faulty nutrition, or faulty management, losses totaling many thousands of dollars annually, that go on year after year with few experimental investigations upon these factors.

It is suggested that a great field of activity is open. It is a field so large that no one state or station could possibly consider all phases of even one project. It is a field that calls particularly for a cooperative spirit. As in other lines of livestock investigations, I believe that State and Federal workers will be found willing to consider projects in which the breeders are particularly interested.

MR. CUNNINGHAM: I would just like to give you a little experience of my own with this periodic opthalmia. About 11 years ago, I purchased a stallion, I had him about 10 months and he developed periodic opthalmia in one eye. I called the veterinarian and he told me what the trouble was. "Now," he says, "it will likely clear up in about two weeks, but it will come back in two or three, maybe ten months." I never saw it again until eleven months later. The horse then developed it again in the same eye and five of my registered mares had it at the same time. I had never had a case of this eye trouble until I bought that horse. It looked as if it was contagious. My experience was that my standard-bred mare went blind the first attack she had. The rest were periodic and it was a very expensive experience for me.

I did not farm for about four years and I got a poor tenant on it. The older I get the more I appreciate my job and I think I'll stick to it. There is no other position in the world that gives a man more pleasure. The man who is farming is doing something that no other man can do; he is producing food for animals and human beings, without which we could not exist.

At this time we will be glad to hear from Mr. Warren Tydings who will tell us the value of a community draft horse organization. Mr. Tydings.

## THE VALUE OF A COMMUNITY DRAFT HORSE ORGANIZATION

By WARREN E. TYDINGS, Knoxville

Our genial president asked me to talk to you on the value of a community draft horse organization. I accepted and then prayed that something would happen. Something did happen. The night before last, my boss called me to come to New York. I asked Mr. Wight to give this talk in my place; however, I then received the message not to come, so here I am.

Mr. Krantz has given you general statistics on horses and mules in

the United States and in Maryland. Frankly, he stole some of my thunder. However, there is one important statistical fact that remains for my use. The U. S. Department of Agriculture reports show that of the eight and one-half million acres of land that are producing surplus crops glutting the market, four and one-half million acres are attributed to the diminished numbers of horses and mules in use on farms.

A pathetic story to me, and many have been the cases, especially in the mid-west, where farmers in the spring of 1937 traded a pair of good horses in on a tractor, planted and worked their crops with it, figuring $1.00 wheat and corn and then with the delivery prices, found themselves forced to sell their crops to pay for the tractor. Their net gain is a second-hand piece of machinery and the need of a loan to start again. Let us profit by the experience of others.

Livestock breeding is both scientific and economic. Sometimes, the economic side is so profitable it completely clouds the scientific. Yet our profits are controlled by the scientific. This can better be expressed by the slogan, "Better breeding; better livestock; better profits". And in connection with this slogan, let me pass just one more warning. All livesock breeding is based on the Darwinian theory that "Like begets like". However, the laws of heredity apply equally for weaknesses. They, as well are transmitted in breeding. All livestock breeders are experimentalists. I like to think of a farm as a great laboratory; the plants and animals are the apparatus, their life blood the chemicals, and myself the technician mixing and controlling them all for the desired results.

Before discussing the subject assigned—that of the value of a community draft horse organization, I think I should justify the position the horse occupies as a source of farm power.

1. The horse is a cheap source of power for he consumes natural resources of pasture and feed.
2. The horse sustains the market price of other livestock and cash crops by consuming feeds otherwise marketed as meat or cash feeds.
3. The horse furnishes its own replacements.
4. The horse does not have any repair bills.
5. The horse is never obsolete; it was built right from the beginning.
6. The horse works as well with soil conservation programs by consuming the increased pasture acreage that otherwise would cause glutted livestock markets.
7. The horse gives a flexible source of power for they can be hitched singly or in numbers as desired.
8. The horse gives a farm a personal touch for every man takes pride and enjoys the ownership of a good horse. This is especially true of a farmer.
9. The horse returns a large percentage of his fuel to the land as manure.

I am personally acquainted with but one breeding organization. I had a part in its formation, and am naturally interested in it. I have twenty mares and have raised twelve foals this year. In 1933, there were but thirty purebred Percheron horses in Frederick County. Through the progressive leadership of several breeders, there are today thirty breeders who own over three hundred registered Percherons. In the spring of 1937 we organized the Percheron Breeders' Association, and last year expended $286.00 in advertising the county and its Percheron horses. Needless to say, every breeder received a return on the money put into the Association of at least $10.00 for $1.00 in advertising, for had he one horse to sell, the expense to properly advertise and sell that one horse would have been at least ¼ of the total amount.

It has long been established in our minds that purebreds in all animals are of superior merit. To further improve and continue in the breeding of livestock it becomes necessary that all the breeders in certain sections get together and organize in the interests of themselves some form of breeding organization. To this end in the spring of 1937 we organized the Percheron Horse Breeders' Association of Frederick County. My experience as a breeder has been very short for I have only been in the business two years. To me, it has been a distinct advantage for through it I have become better acquainted with all the breeders of the county. We, as an Association, kept one thing primarily in our minds, and that was that we were organizing in the interests of having the world at large know that Frederick County, Maryland, had Percheron horses. This we have accomplished. To do this, we extensively advertised and by so doing, have afforded breeders of other livestock in our county and outside as well an opportunity to interest possible customers who may be interested in buying livestock other than horses. We are keeping in mind that the backbone of any breeding organization is found in the native practical farmers some of whom own their farms, and some of whom are tenants, and own only a few mares. We have studied various other sections of this country and the world as well to find what factors made them outstanding horse-raising sections. It is of interest to note that the Perche of France, the native home of the Percheron horse, is not at all unlike the State of Maryland. Its climate is similar; the land is the same, being limestone; its topography is the same, being gently rolling hills with numerous grains dispersed in small valleys and the beginning of a plateau region in this country towards the Alleghenys and France, towards the Alps. We, as a breed organization, take credit this year for having placed the Great Frederick Fair in the black, for it was the increased admissions on the days the horses were shown that amounted to over half of the total profits of the fair.

In the fall of 1936 before the organization of our Association, we pioneered the Maryland State Fair at Timonium with a show of Percherons which this year prompted that Fair Board to give premiums for

a draft horse show as a result of the interest shown. In Frederick County this year we raised premium funds for a 4-H Colt Club Show at which some seventy to eighty foals were shown. A gradual increase in the numbers of both horses and breeders in Frederick County has materially added to the taxable wealth of that county. Any breeders' organization is primarily designed to sell livesotck. However, I feel the greatest value that a member can get is by profiting by the experience and experiments conducted by his fellow breeder. It is only through an association that breeders can become sufficiently well acquainted to exchange such ideas. On Saturday, March 12 of this year, we are conducting a stockmen's tour under the auspices of our association. There would be no possible way to conduct this tour to the satisfaction of all breeders except by a mutual cooperation of the group. The first deficiency that we noted about ourselves was the complete lack of how to show, how to dress a horse to show, and how to fit a horse to show. We, as a group, afforded the Extension Service of the University of Maryland, Mr. Vial as an individual, the opportunity to teach us.

With a single purpose, the promotion of the Percheron horse and a definite goal to improve ourselves, we offer you breeders of all kind of livestock our experience, our support, and will do all we can should you call on us to help you organize any sort of breeders' association. I give this to you in the name of the Frederick County Percheron Breeders' Assocaition.

MR. CUNNINGHAM: I am sure you have all enjoyed Mr. Tyding's talk. We would like to establish a Belgian Association in Washington County. I hope to see the day when we can't hold the Stockmen's meeting in this hotel, but will have to go out in a ten-acre field and set the fences back. We have on the program here Mr. Humphrey Finney who is editor of that well-known magazine, "The Maryland Horse".

## HOW TO IMPROVE OUR DRAFT HORSE SHOWS

By HUMPHREY FINNEY, Towson

Mr. Chairman, Mr. President, Ladies and Gentlemen: If ever again I am put on the program at this sort of meeting, I do not want to follow a talented speaker because he has wound up with the keynote with which I was going to start. I can't say that I am in a position to tell you whether the draft horse shows in Maryland have made much improvement because in the past I have not been able to attend them as I would have liked. What I am going to say now is based on an experience gained as a little boy from farmers' shows in England, and later as a spectator seeing things needing a remedy. The keynote for cooperation in a draft horse show is to have two elements. You have the exhibitors without which you cannot have the show, and you have the management without which you cannot have the show. The improvement lies in getting together and sitting down and talking things over before the

show—not beefing afterwards as to what should have been done. The management of the show very often does not know what the exhibitors want. They should know what the exhibitors want and what they should have. There are several things that occur to me to be very necessary for the success of the draft horse show. In the first place, the horses they bring to the show must be of a quality that will make the people want to look at them and to gain an education from them. These farmers who have one or two horses can be found looking over larger strings brought to the show. They are looknig to see what new wrinkles they can pick up about exhibiting their horses. You should bring your horses to the show ring in good physical condition—feet in good condition, manes and tails plaited, etc. in order that they might make a nice show. Along with that comes the question of soundness. I was brought up in the English tradition that a sound horse was the only horse. The first time I saw a Shire horse in England, there were seventy-two stallions and every stallion had to be examined by the Board of Veterinarians; if not sound, he could not come into the ring. There were three horses out of seventy-two turned down. If you aim at that goal, you will eventually get there.

I spent a day in Frederick County and the thing I noticed was the remarkable quality and soundness of the animals I saw there and what was more remarkable was the shortness of time they had to bring about that soundness. I pity the man who has to judge that county's fair this fall; he better start to get ready now. I believe the choosing of the judges of the show is very important. Very often there is not enough time taken to this job. He should be above reproach in every way. People should not be able to say "No wonder Bill Jones' horse won; he sold him the dam of that horse." When you are selecting your judges, take a great deal of thought and time to get as high-class a man you can, and if possible, a man whose name is well-known; he will bring his own following. Most of the men here today are exhibitors rather than promoters. I think that insufficient attention is paid to the stabling offered the exhibitors at shows, and I do not blame any man if he thinks he will have to bring his horse to stand in a tumbled-down stable that leaks. I think it is up to the men who are going to show to get together and take that point up with the managers of the show in order to get a decent place in which to show them. No one likes to run horses up and down in mud knee-deep.

Another thing that works in with that is more money for exhibitors. Any man who shows a horse goes to a lot of expense and every show should have a decent purse to give him for his trouble.

Through the good offices of our friend John Clark who worked the Annapolis race horse men, they have finally been made to kick in an agricultural premium and that is a good thing. I think the State Fair Board bill passed last year is a good thing. In the case where you have large classes and the only chance a man has to show his colt is once each

year, there should be some form of encouragement. In England we used to have cards with the name of the show and date with "highly commended" or "commended". It was up to the judge to give these; he could give as many of these as he wanted. It would not cost you $5.00 for all you need for the next five years. These are fine to give to the man who does not get an award, to take home and tack on his stable for recognition. I believe the chaps who work behind the scenes (grooms, etc.) should have some decent prize for which a man can work, when he starts getting his horse ready for show meets ahead. If he feels that they appreciate what he is doing he is more apt to do the right thing for his horse to get him in shape if he gets some form of a small prize, but that would have to be worked out according to individual shows. Another thing for the improvement of shows, and while I think it is a great thing to throw the classes open, it is a better idea to keep in state-bred animals alone, and bar imported horses. The man who can go to France and pay $2000 for a horse has got one over the little man. We found that the Maryland breed races and stimulus given by our Maryland Racing Committee is a good thing in itself. I do not advocate it over a large period of time because it would encourage the breeding of inferior stock. Another point in which Mr. Tydings stole my words was on children's classes. I have been fighting for more of these classes in the light horse shows. If you look at it simply from the box office standpoint, if one of the men shows a horse he usually brings his wife or girl; if a kid shows, he will bring all his relatives—mother, father, aunts uncles, grand-parents, etc. and swell the box office. It is a good thing to encourage the youngsters. While I am here, I too, may as well get in a little advertising and publicity. The Maryland Horse Breeders' Association which I represent is certainly anxious to get it over to draft horsemen that while the Association was started by Thoroughbred men, we want to represent all of the breeds from Shetland pony to Shire. We think we are offering you a means of getting your horse known. We are sending out almost 2500 copies of the Maryland Horse all over the United States and if you will send me any information about your shows, tours, etc., I promise you it will receive publicity. When you are going to show put in a little advertisement which will serve you well. Possible buyers might see it and be interested. I know, in my case, if I am in the market for a two-year-old colt and learn that Bill Jones will show his string at Timonium, I am more likely to go up there to see what he has to offer and try to buy them than I would be to take a day off and go around scouting for things.

I believe it will be a great improvement for all draft horse shows to advertise them in any way possible.

MR. CUNNINGHAM: The next thing on this program is sheep. Mr. Miles is next on the program.

## THE MARKET LAMB

By FRENCH MILES, Baltimore

I would like to express my appreciation at this time for the privilege of having a chance to talk on your program. I feel that the former speakers here have left some food for thought that might well be used, and at the beginning I want to say that over at the Baltimore Livestock Show we had the first Maryland class for lambs. This past year the Maryland 4-H Club members had a good show as far as members and lambs were concerned. They were proud of the fact that the Maryland boys had the nerve to come out and put on an exhibition that needed a lot of help.

It is rather fitting and proper that we spend some time discussing the production of market lambs in Maryland. Statistics show that Maryland has a fair sheep population and on January 1, 1937, gave your state 84,000 head. These sheep are located in every county in the State, with the greatest numbers in Queen Anne, Talbot, Dorchester, Washington, Garrett, Kent, Montgomery, Howard and Frederick Counties.

Maryland is favorably located as to the production of market lambs in that a very large percentage of the lambs consumed in the United States are consumed here in the east, which puts your lambs as near to the consuming center as it is possible to get them. Your lambs are located near enough to a terminal market so that producers can market their lambs cheaper than any other states, hence your net returns should be greater.

I have been asked to discuss some of the phases of market lamb production and how certain other states in the East have made progress in the production of lambs. One of the first and most important factors in the improvement of any condition is, "There Must Be a Desire". Wherever there has been a real desire on the part of livestock producers to improve conditions they usually can accomplish their purpose. The two Virginias, Kentucky and Tennessee in the East have in the past few years made some rapid progress in the improvement of their market lambs, until lambs coming from a number of counties in these states are so much in demand by the packers that they pay a premium for them. I am more familiar with the work done on the improvement of market lambs in the two Virginians. The basis of the West Virginia lamb improvement program, which started in a real organized way in 1925, when the lamb producers were interested in securing more money for their product. With this desire, the lamb producers met with the Animal Husbandry group at the College and the "Master Shepherds" program for market lambs was developed. This program had for its goal to return to the producer more net money for his products. A study of the various counties that were interested showed that they all had about the same problems. These problems all seemed to revolve around one big problem, that of marketing, not just selling lambs, and there

is a great big difference. The Extension Service, purebred breeders and other organizations had preached the gospel for years to use purebred rams. Others talked feeding, treating for parasites, but with little or no results. The producer would look you in the face and tell you without a struggle that he had done all the good practices recommended and his neighbor had done nothing, and when he went to the scales with his lambs the livestock dealer paid him the same price per pound for his lambs as his neighbor, for all lambs weighing 65# or 70# and fat. These statements are facts, because I have had producers tell me this and have followed livestock dealers and know that they have followed this practice.

First, let me state that I have no fault to find with the dealer. I do not agree with his system, which is as much out of date in today's business as coming from the western part of Maryland to Batlimore with a horse and buggy, but the producers forced him to pay the same price to all in any one community. These statements of the producers brought about a real production and marketing program in various counties. This program is as follows:

1. The breeding ewe flocks—Ewes should be uniform in size and breeding. They should weigh from 115 to 140 pounds at breeding time. You should have at least 25 ewes in your flock.
2. The ewes must be bred to a good purebred ram of one of the recognized mutton breeds, and as near as possible the same breed in a community. (This gives more uniformity to lambs in any one community.) It is important that a good purebred ram is used—not just a registered ram, because we have too many rams used over the country that have papers with them, but it would be hard to tell what kind of sheep he was if they did not tell you on his pedigree. A market lamb producer can afford to pay a real price for a good ram, and a poor ram is high if he is given to you.
3. Breeding of the ewes will, of course, depend when you expect to market the lamb crop, but breed your ewes so that they will lamb in a four to six weeks period. Who wants to have ewes lamb from January to June as many of you do?
4. Feeding of the ewe flock in the winter period—If you are lambing early your ewes should have plenty of legume hays, some grain, oats and corn, depending on the condition of the ewes. If they are thin at the beginning of the winter period you may need to give them plenty of corn in their ration. Your ewes should gain weight from the time of breeding to lambing. They must also have plenty of water, salt and exercise. This is important. If you want to have a big loss in your ewe flock give them plenty of timothy hay.
5. After lambing give the ewe plenty of feed so that she will produce milk for her lambs. When the lambs are a few weeks old start them to eating some grain, starting them on bran, oats and corn, gradually reducing the bran and oats and increasing the corn. Keep

this feeding of the lambs until they are marketed. If you lamb late after there is plenty of grass you can produce lambs on good pasture without feeding, but your percentage of choice lambs and good lambs will be smaller.

6. When your lambs are from three to four weeks of age dock and castrate them. You may tell me that this is not necessary but if you do not dock and castrate you never will be a "Master Shepherd." I do not care what method you use; that is up to the individual sheep man, but any farmer can learn to dock and castrate his lambs. Personally, I would rather use a knife than any other instrument.

7. Control of parasites is a real job. Most state Experimental Stations have developed very satisfactory methods. You can use any method that is effective, economical, safe and easy. The cheapest, easiest and most effective method that we have ever found in West Virginia to control internal parasites is the copper sulphate treatment. But keep this in mind, you are using a poison in any method you might use and you must follow directions. The internal parasites you have to control are stomach, tape, nodule, round, rook and whip worms. All of these parasites live in the fourth stomach. There are no parasites in any other stomach. You may have lung worms, which can be controlled. Grub in the head never killed any sheep that I ever saw, but the wrong kind of "grub in the bellies" has killed many. External parasites, ticks and lice can be controlled by dipping. How often you will have to treat for internal parasites will depend upon how heavy the infestation.

8. The marketing of your lambs is the real test of how good a job you, as a shepherd, have done in breeding, feeding, care and management. In our West Virginia program we developed a grading program, and this is where we were able to demonstrate that the various good production practices really paid. The lambs were graded in the country in the following grades: Prime and choice in one grade and called the Blue lambs, Good lambs or Red lambs, Medium lambs or Yellow, Plain lambs, Common and Skips. The prices on these lambs usually run with the choice lambs bringing 50 cents per hundred more than the good lambs, medium lambs $1.00 to $1.50 less than good lambs, plain lambs $1.00 to $1.50 less than mediums. Producers coming in with lambs that graded medium and plain were encouraged to take them home, treat them for parasites and feed them, and in most all cases they can raise them one grade. In most all cases a farmer can make good money by feeding these lambs before he markets them.

The program outlined is one that several thousand lamb producers have followed in West Virginia this past year and about 40% of all the lambs marketed in the State were graded this year and marketed cooperatively. In Virginia this year about 50% of the lambs produced in

the principal lamb producing counties were graded in the country and marketed cooperatively.

If I were to suggest a program for Maryland market lamb producers, I would like to call your attention to the fact that you are located in a very favorable position to produce and market lambs economically. I have not mentioned the Easter lamb trade. The season for these lambs is so short that only a few producers can make it economical or profitable, so what I may suggest does not fit into this specialty market. You must improve the type of your breeding ewes, get more uniformity in the flock—get all black face ewes, white or gray, don't have all colors. Buy good, purebred rams. We see too many of your lambs that are sired by long-legged, slab-sided, keg-headed rams showing no breeding or breed character. Dock and castrate your lambs—they are more attractive to the buyer and are worth more money to him and to you. If you are going to put your lambs on an early market you will have to feed the lambs some grain, and corn is what you need. Control parasites in ewe flock and lambs.

I would like to have you ask yourself some questions. Do you keep sheep because your father kept sheep? Do you use a scrub ram because your neighbor does? Do you sell your lambs to John Smith because he bought them last? Am I a good shepherd, produce top lambs and market them intelligently? In other words, do you just keep sheep and sell lambs or do you produce lambs and market them?

The Baltimore terminal market offers to you the best possible outlet twelve months in the year for your lambs. If you, as a producer, will produce a high quality product you can get a high price. The county that will get their lamb producers together and work out a Master Shepherd program of production and marketing can make a name for itself. What county in Maryland has a reputation for high quality lambs? There are counties in Virginia and West Virginia that have gone far enough that their lambs are known far and wide for their quality and are bringing more dollars than others, and this was not brought about without some effort on the part of the producers to produce and market cooperatively. They have a program.

The county or counties in Maryland that are ready to start work can accomplish just as much. I feel sure that your Extension Department will cooperate with you and the organization with which I am associated, the Eastern Livestock Cooperative Marketing Association, will give you as much time and service as possible. This year we have sold over 100,000 graded lambs and are willing and anxious to assist the Maryland producers reach a high standard of market lamb production as your neighbor states.

I know of no project that the Maryland Stockmen's Association could better sponsor in some of your sheep producing counties than a "Master Shepherds" program of production and marketing, and the two—production and marketing—must go together. To try one without the other would mean failure.

MR. CUNNINGHAM: The next speaker on our program is Mr. J. C. Cash, President of the Baltimore Union Stock Yards. Mr. Cash will speak on the subject "Can We Feed Western Lambs in Maryland".

## CAN WE FEED WESTERN LAMBS IN MARYLAND?

By J. C. CASH, Baltimore

I hope you will remember and believe the things I say, to the same degree most Eastern farmers accept the statement that livestock must be fattened in the cornbelt, and that you cannot compete with them in this enterprise. When the business of fattening is mentioned, the price of corn is brought up, and the answer, "they have the edge on us, they have cheap corn", seems to end it all. Of course, the price of corn is lower in the cornbelt than in Maryland, but whether they can produce it cheaper or not is another question. Hay and other roughages except grass probably can be sold for a little more money in Maryland than in Iowa, which, because of the great amount of corn produced is usually considered the cheapest state in which to feed in the nation but the only comparison we have is price received by farmers according to state statisticians figures.

Maryland produces well—corn, barley, wheat and various kinds of hays for livestock feeding but our most favorable asset is the nearness to market. Livestock men must either be near the market or else have good transportation to it.

The probable feeding area in Maryland is near enough to reach the Baltimore Market in a few hours by train or truck. This nearness eliminates the gamble in declining markets while in transit. Fed lambs arriving in Baltimore now moving from Michigan, Ohio or Illinois, must take the price fluctuation chance.

The Baltimore lamb market during the summer and early fall months, when you know it best because you have lambs to market then, is entirely different market from our winter market. During our heavy run of native lambs we are between production and ultimate consumption and our prices are usually slightly below the highest markets of the country. After December 15, receipts from nearby territories cease and Baltimore live lamb prices increase comparatively and go above others for we become a consumptive market farthest from production. A big lamb killer in New York city showed me bills for 150,000 lambs purchased in Denver, killed in New York city one winter fed lamb season. Half the lamb consumption in the U. S. is eaten in the area Washington, D. C. to Boston.

To get some comparison of how the Iowa lamb feeder and the Maryland lamb feeder compared, two loads of feeder lambs, 350 head each, were theoretically originated at Encampment, Wyoming, one load stopped at Ames, Iowa, which is about central in that state and the other came to Baltimore. The Ames load was taken to weigh 60 lbs. average

there or 21,000 lbs. total. The 21,000 lb. original weight is handled this way with local rates (34c) on the increase, in this case, 25 lbs. per lamb or 8,750 lbs.

The Maryland load would shrink some in transit from Ames here so 20,000 lbs. is taken instead of 21,000 lbs. Freight from Encampment, Wyoming, is figured. Corn is 19c per bushel higher in Maryland than Iowa the six feeding months, October to March, 1929 to 1934 (the abnormal period of October, 1930—March, 1931 being omitted from Maryland average); 700 bushels of corn—two bushels per lamb—and about 20 tons of hay at $2.00 per ton more in Maryland than Iowa.

Baltimore lamb prices will conservatively average $1.10 per hundred over Chicago for the same day. Monday, January 10, bulk Chicago fed lambs 8.25 to 8.40, top 8.60. Baltimore lambs same day, 9.65 to 9.85 per hundred, top 10.00. Here are the figures on the two loads.

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| 21,000 lbs., Encampment, Wyoming to Chicago (via Ames, Iowa) | @ 71½ | $150.15 |
| 8,750 lbs., Ames, Iowa, to Chicago, Ill. | @ 34 | 29.75 |
| | | $179.90 |
| 20,000 lbs., Encampment, Wyoming to Baltimore, Md. | @ 1.00½ | 201.00 |
| 700 bu. corn @ 19c excess Md. price | | 133.00 |
| 20 tons hay @ 2.00 excess Md. price | | 40.00 |
| Additional haulage, 29,750 lbs., @ 15c per cwt. | | 44.62 |
| | | $418.62 |
| Difference in expenses | | 238.72 |
| Difference in income, Md. lamb 29,750 @ 1.10 per cwt. | | 327.25 |
| Difference in favor of Maryland feeding | | 88.53 |

per car or 25c per lamb.

This money is not the profit to be derived from feeding a car of lambs, but the additional amount possible for Maryland feeders of lambs over Iowa feeders of the same species.

I have tried all the way through to be fair in prices and expenses. I'd rather it would be better than pictured.

Mr. K. A. Clark, our President, a few days ago asked me if I still believe it profitable to fatten western lambs in Maryland—I still do.

MR. ERNST (Chairman of Hog Program): The first speaker on our Hog Program is Mr. N. E. Ellis who is pinch hitting for Dr. Paul E. Howe of the U. S. Department of Agriculture.

# THE MINERAL AND VITAMIN REQUIREMENTS OF SWINE

By N. R. Ellis, Washington.

Under average farm conditions prevailing in the eastern half of the country, the problem of meeting the mineral and vitamin requirements of hogs should not present any unusual difficulties. While new facts about the subject continue to be uncovered, a large body of information is available upon which to base sound feeding practice. An intelligent understanding of the principles involved will do much to remove the doubt and uncertainty surrounding the subject. In recent years, good farm practice has dictated the diversified use of feeds for the rationing of hogs. Both green forage crops and protein concentrates are well recognized and widely used groups of feeds. The usage of these feeds was adopted in some instances before their value as sources of minerals and vitamins was appreciated. In view of the emphasis which is placed upon vitamins and minerals, not only in investigational work, but more especially in popular writings and advertising matter, it is only natural that there will be questions in the minds of livestock feeders as to the real needs and the sources of supply for each of the nutritional factors.

As already indicated, the avoidance of nutritional difficulties associated with minerals or with vitamins is not a difficult task. There are times where difficulties may result through lack of a normal production of the usual feeds or lack of information on the general nutritive properties of some unusually cheap or readily available substitute feeds. Under the drought conditions such as have been experienced in recent years in various parts of the country, livestock have had to subsist on very meager amounts of poor quality feeds over long periods of time. The result has been in frequent instances the development of varying degrees of vitamin deficiency.

## Vitamins

The term vitamins covers a group of substances, each of which has been proved a necessary constituent in the diet of one or more classes of animals. Much of our knowledge of vitamins has been obtained from experiments with small laboratory animals, including rats, guinea pigs, and pigeons. Of the farm animals, more is known about vitamins for chickens than for any of the others. A lack of any one vitamin from the diet generally results in a characteristic symptom or group of symptoms in the animal.

In designating the several vitamins it has been customary, in this country at least, to name them by letters of the alphabet in the order of discovery and to describe the condition resulting from a lack of the particular factor in the diet by a characteristic term. Thus, vitamin A has been associated with xerophthalmia, an eye trouble; vitamin B with beriberi, a disease prevalent among people subsisting largely upon milled

rice; vitamin D with rickets and vitamin E with sterility. In addition to the factors just named, a number of others have been discovered within recent years and the end is not yet in sight.

Thus far, experimental work with hogs has shown that this species certainly requires vitamins A and D. The requirement for vitamin C, if any, is very small. There is some evidence that vitamins B and E are required. It is probable that several other factors, especially those having to do particularly with growth are also required.

Of all the vitamins concerned in swine nutrition, vitamin A has received the greatest attention and is the best understood. Cases of vitamin A deficiency have appeared under various farm conditions. However, all can be traced to a lack of the curative or preventive substance in the feed. Chemists have isolated and studied the substance called vitamin A. It has been found that the animal body has the ability to convert the yellow plant pigment, carotene, into vitamin A for use in the body. In general, plant feeds supply carotene and animal feeds vitamin A direct. It is difficult to judge the value of feeds merely by the intensity of yellow or yellow-green color since several pigments of varying hues of color occur together in most feeds. In general, the carotene in forages is associated with brightness of green color.

Night blindness appears as the first easily recognized evidence of need for vitamin A in hogs. It has been found that growing pigs may lack normal vision in semi-darkness and yet make practically normal gains over long periods of time. The blindness is evidenced by their behavior when the animals are driven about the enclosure in twilight, moonlight, or dim electric light. Other symptoms which generally develop following evidence of night blindness are diarrhea, and advancing degrees of muscular incoordination and partial paralysis of the hind legs. Growth becomes stunted and finally ceases. The eyes show watery discharge including ulceration in some cases, and finally total blindness. Unless vitamin A supplements are provided in these extreme cases, death finally results.

At the Texas station, sows on vitamin A deficient rations have farrowed litters with a variety of defects including blindness or even failure to develop eye tissue, cleft palate, and hare lip.

Under drought conditions in Missouri, partial paralysis of the limbs was observed in pigs fed rations normally adequate in vitamin A. Apparently, the feeds available for use were not so rich as usually found in the vitamin-forming material. With return to normal rainfall and growth of new crops, the trouble apparently disappeared.

Probably the earliest experiments to demonstrate the need of pigs for vitamin A were those at Wisconsin in a comparison of white and yellow corn. The failure of the white corn to produce growth equal to that of yellow corn is attributed to the lack of carotene. These experiments had much to do with the development of rations containing good grade legume forage and preferably yellow corn for winter or dry lot feeding.

Workers at the California Agricultural Experiment Station have found that the minimum requirement for vitamin A is approximately proportional to body weight for cattle, sheep and hogs. If sufficient need develops, it should be possible to establish tables of values covering requirements of hogs together with the quantities of feeds necessary to meet these requirements.

However, good farm practices now in use, which involve the feeding of green forage crops during the growing season and of some form of good quality leafy legume hay, yellow corn or other vitamin A or carotene-rich feeds during the winter season, are reasonably sure safeguards against vitamin A deficiency. Such safeguards are especially applicable to the pregnant or lactating sow and the growing pig. A ration of yellow corn, a protein mixture of two parts tankage, one part alfalfa leaf meal, and one part linseed oil meal and a mineral mixture have proven very satisfactory for winter or dry lot feeding, not only as a protective feed mixture against vitamin A deficiency, but as a source of mineral elements, protein, and other vitamin factors, including vitamins B and E. While the requirements of certain species for these last named factors are well understood, little is known concerning them for hogs. Ordinarily, well chosen hog rations appear to be sufficiently rich in vitamins B and E so that they are not materially improved by additional supplements known to be rich in these factors.

Vitamin D, often called the sunshine vitamin, is associated with calcium and phosphorus utilization in bone formation. It is only when hogs are denied access to reasonable amounts of sunshine that disturbances due to this factor may become pronounced. Since vitamin D is associated with the use of the mineral elements, calcium and phosphorus, further discussion of rickets will be made in connection with consideration of these elements.

## Minerals

It is now generally recognized that the minerals required by hogs, with the possible exception of common salt, can be provided in sufficient quantity by the proper selection of feeds. Conditions frequently arise where a deficiency may arise due to a lack of some particular element. There are two ways of meeting such situations. One way is to provide at all times an adequate mineral mixture in a self-feeder and let the hog do his own choosing and the other is to study the problem at hand sufficiently to determine what particular substance is required. It may be a surprise to learn that the first method may not always work. The hog may fail to eat enough of the mineral mixture to secure a sufficient amount of the lacking element, particularly if the mineral mixture is poorly chosen or is too complex with relation to its supplementary value to the grain ration. It thus not only fails to furnish the proper amount of the mineral element in question, but is not economical. Accordingly,

special medication with the lacking element or elements is frequently the cheapest and most satisfactory remedy.

Calcium and phosphorus are the two mineral elements of greatest importance in skeletal growth. Without proper development of the bones, the body cannot develop normally. Various disorders result, the most characteristic of which is rickets. The outward evidence is shown in lameness and stiffness. The bones are easily broken. In severe rickets, growth is retarded.

The arresting of normal skeletal development may be due either to a lack of calcium, of phosphorus, or of vitamin D. Generally, it is due to a low consumption of calcium. Under most conditions from one to two times as much calcium as phosphorus should be provided. The actual quantities in the diet may vary somewhat depending on the stage of development of the hogs. The ratio of one element to the other should be kept within the range indicated. Most authorities agree that approximately 0.3% of phosphorus and 0.4% calcium are sufficient for the growing pig. Corn and other cereals are much higher in phosphorus than in calcium. On the other hand, animal protein feeds such as tankage, fishmeal, skim-milk and buttermilk, are richer in calcium than in phosphorus. The legume forages such as alfalfa, clover and soybeans are likewise richer in calcium than in phosphorus.

A ration composed of nine parts corn and one part tankage is fully adequate in phosphorus and needs little, if any, additional calcium for growing and fattening pigs. The inclusion of five per cent legume hay in the ration or access to green legume forage will improve the calcium to phosphorus ratio of the ration and also improve the supply of needed vitamins. As indicated in the foregoing, it is possible to check on the adequacy of the ration for calcium and phosphorus by the use of suitable tables of mineral composition. As a measure of safety, the Department has recommended in various publications relating to swine feeding, that a suitable mineral mixture be kept available in a self-feeder, so that the hogs may satisfy their wants for additional mineral matter above that provided in the basal ration. A mixture of equal parts of bone meal, ground limestone and common salt has been found satisfactory. Such a mixture contains approximately 23 per cent calcium and 4.5 phosphorus, together with sodium and chlorine contained principally in salt.

A lack of salt is marked by poor appetite, unthrifty condition, and failure to grow. Tankage usually contains considerable salt. Milk products are also good sources. Hence, hog rations containing such protein supplements are less likely to be deficient in sodium and chlorine than are customary cattle and sheep rations.

In those sections of the country where goiter commonly occurs, it has been found desirable to administer iodine to the breeding stock and occasionally to the growing stock. Since there is danger in overdosage of iodine, it is desirable to add iodine only when a deficiency is likely to occur either in the feed or the drinking water. Goiter is comparatively

rare along the Atlantic seaboard. Locally grown feeds usually contain sufficient iodine for feeding livestock, and supplemental feeding of potassium iodide or the use of iodized salt is seldom necessary.

Anemia is another nutritional disease which occurs most frequently in suckling pigs. Experimental work has shown that the condition is due to a lack of iron and copper. The disease is characterized by failure to form a normal supply of red blood cells. Affected pigs show paleness of the mucous membranes, sluggishness, lack of vigor, failure to grow normally and other symptoms. Since the disease is most frequent among pigs confined without access to soil, suitable provision in this respect is the first remedial measure. Medication with iron and copper salts or iron salts alone is sometimes necessary. Recommended procedures in this respect are to add 10 grams of ferrous sulphate and 1.5 grams of copper sulphate dissolved in water to each 50 pounds of soil which is placed in the pen, or in the case of suckling pigs to swab the sow's udder once a day with a saturated solution of ferrous sulphate.

A number of other nutritional disturbances in various animal species attributed to mineral deficiencies have been reported. Among these are deficiencies of magnesium, manganese, cobalt, and zinc. The importance of these elements in hog feeding is not known. Considerable attention has been given to the toxicity or poisoning effects of fluorine and selenium. Unless care is used in the manufacture of rock phosphate and products such as acid phosphate and dicalcium phosphate made from it to remove most of the fluorine there is danger of ill effects from the feeding of such products to livestock. Selenium poisoning occurs in certain restricted areas of the plains region or on feeds grown in these areas. It is termed "blind staggers" or alkali disease. As with a number of other kinds of deficiency diseases, the Atlantic seaboard is unlikely to be troubled by selenium poisoning.

In conclusion, it should be pointed out that the quantitative relationship between the mineral elements and also the vitamins are important from the standpoint of physiological group effects. Fortunately, in the case of hogs and most other farm animals, the animal body has effective means of regulating its functional activities even though relatively extreme conditions are imposed upon it.

The discussion which has been presented has aimed to show that a good supply of vitamins and minerals can be provided without elaborate additions of special materials to the hog ration. It can be safely said that it is both good feeding practice and good economy to provide only those supplementary substances which are reasonably likely to be required. Main dependence should be placed on the proper selection of the basal ration and the proper feeding procedure.

MR. ERNST: The next speaker on our Hog Program is Mr. Maguire Mattingly who will discuss "Experiences of a Hog Raiser".

## EXPERIENCES OF A HOG RAISER

By MAGUIRE MATTINGLY, Pearson

My experience in raising hogs in numbers began in 1929 when I undertook the management of Susquehanna Farms at Pearson. As you know, I am still at Susquehanna and consequently, the short story of hog raising which I am about to tell here is the history of Susquehanna hogs during the last nine years.

Until 1936 we raised Duroc-Jerseys altogether and we found them quite satisfactory. However, in that year we experimented with cross-breeding for the first time and had good results. We bred Duroc sows to a black big-boned Poland-China boar. We found that an increase in the numbers in the litters resulted and that the pigs were probably slightly larger and reached maturity sooner. We often have our hogs weighing 200 pounds and ready for market at six months. So far as cross-breeding is concerned, we have found it profitable and worthwhile. However, I suggest that it is well to cross-breed only purebred stock and to pay particular attention (as with cattle) to the male selected.

As a practical matter, we try to have our sows farrow at about the same time in order to save time and labor. Our schedule calls for two litters a year from each sow. This year we should have spring pigs from fifty sows. About two weeks before the sows are expected to farrow, they are moved into a clean pasture where portable houses are provided. We force feed the sows after the pigs are born to keep them in as good shape as possible. We creep feed the pigs as soon as they will eat and wean them when they are about eight weeks old. After weaning, they are fed grain, tankage, minerals and are left on pasture. I wish to emphasize the importance of good pasturage for the brood sows and the pigs both from the standpoint of the health of the hog and the saving of feed.

The corn is hauled on the field by wagon and shoveled to the hogs at feeding time. We give them all they can eat. The wagon is left in the poorer parts of the field so that they will be fertilized.

When they reach about 200 pounds we take them to market. The system of feeding them all they will eat makes it certain that they will be fat and ready to be slaughtered.

The prices of hogs have varied greatly during the past nine years. We have received from 2½ cents to 20 cents a pound and that means from $5.00 to $40.00 a head. I am satisfied that they have been a profitable crop and that raising them has been worthwhile. The average price has been good; hogs are comparatively easy to raise; they consume feed raised on the place in large measure; on pasture they fertilize the land. As a good reliable cash crop they have an important place.

MR. ERNST: There being no further business we will adjourn and meet again this evening at the banquet which will be held in the main ballroom of this hotel.

## EVENING SESSION

### Banquet

President K. A. Clark, presiding as toastmaster.

MR. CLARK: I am delighted to see that so many of our stockmen have stayed for the banquet this evening and as I look over the faces present, I see several that were not in attendance today. The Maryland Stockmen's Association has had a number of meetings and it seems to me that each year the meeting is better than that of the previous year. We had a good attendance at our meeting today and some very interesting talks. These meetings are very valuable to our people here in the State so let's make next year even bigger and better than this year.

I am not supposed to do much talking here tonight; we have two or three speakers on the program and we want to give them all the time we can.

First on the program is Dr. Mark Welsh from the University of Maryland who will tell you about "Our Livestock Sanitary Service"; then we have Professor J. E. Metzger, also from the University who will talk on "Maryland Pastures"; and last but not least, we have Mr. Calvin Kinstler of Baltimore presenting "Models—animate and inanimate".

## OUR LIVESTOCK SANITARY SERVICE

By DR. MARK WELSH, College Park

Under Article 58 of the Maryland State Law, the State Board of Agriculture is charged with the responsibility of preventing and controlling, in so far as is possible, all contagious and infectious diseases of live stock. Broad powers are also given permitting inspection of premises, testing of animals, the enforcement of quarantines and such other procedures as may be necessary to carry out the intent of the law.

The Livestock Sanitary Service, functioning as a part of the State Board of Agriculture, is responsible for the enforcement and promotion of virtually all of this type of work. Regulations of the Board are periodically issued to clarify and more effectively cover situations which are broadly mentioned in the law. It is impossible here to do more than briefly touch the various phases of work now being done. Roughly, these activities may be divided into laboratory diagnoses, research, teaching, regulatory and field work. There is not, however, nor should there be, a definite line of demarcation between these different types of work and all are correlated to give the best results.

### Laboratories

Laboratory service is provided at College Park, Baltimore and Salisbury. During the last fiscal year, 309,665 laboratory diagnoses were made, or over 25,000 each month. Much of this was on blood samples being tested for Bang's and Pullorum disease. There were, however,

several thousand examinations made on animal tissues, milk, feed, uterine ilora and other materials. These diagnoses included Bang's disease, tuberculosis, anthrax, actinomycosis, encephalomyelitis, rabies, pyelonephritis, periodic ophthalmia, Johne's disease, Blackleg, intestinal parasites and, in all, some 60 different diseases or conditions. In addition to the diagnostic work in the College Park Laboratory, all tuberculin used in the state is prepared there, antigens used in Bang's and Pullorum disease testing are made, as well as many autogenous bactrins for treatment against specific infection.

## Research

Much progress has been made in the last 25 years in the control of animal disease but many problems are still unsolved. New diseases also appear from time to time, such as encephalomyelitis of the horse and swine erysipelas of hogs. It is most important, therefore, that studies on various infections, diseases and conditions be continued until practical control or eradication methods can be developed. At present, such studies are being conducted on Bang's disease, protein tissue injury, mastitis, periodic ophthalmia, trichomoniasis, hemoglobinorrhea, encephalomyelitis. swamp fever, blackhead, tests for pregnancy, trichinosis and other parasitic conditions.

## Teaching

The anatomy and physiology of domestic animals is taught to the various students electing the subjects and a basic understanding of the cause of disease and tissue injury is given. Work is also presented on blood and urine analysis, poultry disease and sanitation and advanced work for graduate students.

## Regulatory

This phase of the work concerns the importation and exportation of livestock, enforcement of quarantines, maintenance of official records of tuberculosis, Bang's and Pullorum disease tests, accreditation of herds and flocks and similar work of an enforcement nature. Federal and State laws and regulations govern the inter-state movement of most live stock. Railroads and other common carriers give excellent cooperation, but the independent truckers are most difficult to control. Diseased or exposed livestock may be rapidly transported from one section to another setting up another center of infection. This is also true where animals are assembled for public sales without proper inspection. Definite efforts are now being made to correct these two latter conditions.

## Field Work

During the last fiscal year, all Maryland counties were classified by the Federal Government as Modified Accredited Areas for tuberculosis. This means that the infection rate has been reduced to one-half of one

per cent or less, but does not mean that Bovine tuberculosis has been eradicated. It is imperative, therefore, that such testing be continued if we are to hold the gains already made.

For the past several years, there has been a decreasing number of outbreaks of hog cholera which we feel is largely due to swine producers being careful to feed nothing that may contain cholera infected pork wastes and seeing that new stock purchased are not sick with or have not been exposed to hog cholera.

Several herds have been tested for Johne's disease and due to improvements in the testing agent, we feel much more confident of the results of the examinations.

Approximately 250,000 chickens were tested for Pullorum disease and several hundred birds were examined for other diseases and conditions.

Swine erysipelas, sheep scab, rabies, encephalomyelitis and other diseases and conditions have sporadically occurred in various parts of the state. Losses due to poisonous plants, mineral poisoning and spoiled feeds have occasionally been reported also.

Bang's disease testing has been progressing very rapidly and there are now about 85,000 head of cattle under supervision. Virtually all cattle in eight counties have been tested under the area plan and similar work is in progress in six other counties. In the counties where dairying is a major industry, work is being conducted as rapidly as economic conditions will permit. A request has been made to the Federal Government to increase the sum allotted to Maryland for Bang's disease work and it is quite probable that this will be granted. It is too early to make any definite statement, but it appears now that the one hundred thousand dollar supplementary indemnity appropriated by the last Maryland Legislature will be inadequate to meet the demand for a full twelve month period. About 550 herds are now accredited as being free of Bang's disease and this number is increasing very rapidly. Relatively few such herds become reinfected and in the majority of instances, new infection is introduced by the purchase of cattle that have been exposed. Considering the number of cattle in the state in relation to the total cattle population, Maryland now ranks about twelfth in the United States and second in the North Atlantic group of states.

## REPORT OF HERDS TESTED FOR BANG'S DISEASE FROM OCTOBER 1, 1935 TO SEPTEMBER 30, 1937 UNDER STATE OR FEDERAL SUPERVISION AND BY VETERINARY PRACTITIONERS IN THE LIVE STOCK SANITARY SERVICE LABORATORIES.

| County | No reactors on last test | | Accredited Bang's Disease Free | | Federal Supervision | | State Supervision | | Veterinary Practitioners | | Totals | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Herds | Cattle | Herds | Cattle | Herds | Cattle | Herds | Cattle | Herds | Cattle | Herds | Cattle |
| **Allegany | 761 | 2565 | 2 | 32 | 809 | 2824 | 0 | 0 | 18 | 342 | 827 | 3166 |
| **Anne Arundel | 676 | 2586 | 11 | 186 | 688 | 2381 | 9 | 443 | 9 | 37 | 712 | 2988 |
| Baltimore | 472 | 4894 | 51 | 1384 | 150 | 3550 | 37 | 1672 | 442 | 2998 | 663 | 8649 |
| **Calvert | 689 | 1642 | 1 | 58 | 699 | 1674 | 0 | 0 | 0 | 0 | 700 | 1732 |
| Caroline | 87 | 884 | 5 | 75 | 27 | 348 | 15 | 224 | 74 | 765 | 108 | 1207 |
| Carroll | 153 | 1645 | 35 | 838 | 66 | 967 | 6 | 163 | 173 | 1936 | 277 | 3827 |
| Cecil | 122 | 2074 | 12 | 501 | 58 | 1742 | 19 | 518 | 121 | 1128 | 196 | 3553 |
| **Charles | 995 | 3771 | 3 | 15 | 1032 | 3953 | 0 | 0 | 1 | 14 | 1036 | 3982 |
| **Dorchester | 202 | 1079 | 1 | 20 | 259 | 1648 | 5 | 61 | 0 | 0 | 260 | 1668 |
| Frederick | 166 | 1941 | 28 | 706 | 80 | 1512 | 8 | 257 | 149 | 1305 | 258 | 3547 |
| **Garrett | 2080 | 8665 | 27 | 299 | 2060 | 9092 | 1 | 12 | 9 | 44 | 2096 | 9435 |
| Harford | 282 | 3132 | 22 | 719 | 112 | 1879 | 10 | 513 | 311 | 3539 | 450 | 6591 |
| **Howard | 93 | 1173 | 11 | 330 | 65 | 1025 | 4 | 96 | 58 | 1275 | 135 | 2708 |
| Kent | 126 | 1705 | 16 | 498 | 64 | 1166 | 12 | 342 | 88 | 873 | 168 | 2537 |
| Montgomery | 238 | 2191 | 21 | 566 | 198 | 1744 | 11 | 411 | 87 | 1109 | 309 | 3515 |
| **Prince Georges | 1438 | 4644 | 7 | 564 | 1511 | 4727 | 11 | 254 | 22 | 225 | 1543 | 5542 |
| Queen Anne | 137 | 1709 | 20 | 675 | 104 | 1371 | 8 | 242 | 86 | 753 | 211 | 2837 |
| **St. Marys | 1058 | 3438 | 2 | 213 | 1094 | 3523 | 1 | 20 | 0 | 0 | 1096 | 3756 |
| Somerset | 49 | 383 | 2 | 31 | 48 | 388 | 10 | 104 | 10 | 164 | 61 | 628 |
| Talbot | 107 | 1357 | 20 | 350 | 48 | 615 | 14 | 290 | 78 | 861 | 151 | 2048 |
| Washington | 153 | 1704 | 25 | 530 | 135 | 1463 | 13 | 163 | 53 | 398 | 218 | 2462 |
| **Wicomico | 857 | 2103 | 11 | 258 | 886 | 2156 | 17 | 134 | 13 | 103 | 912 | 2537 |
| Worcester | 142 | 941 | 11 | 146 | 146 | 920 | 17 | 166 | 5 | 50 | 163 | 1128 |
| Totals | 11083 | 56226 | 344 | 8994 | 10339 | 50668 | *228 | *6085 | 1807 | 17919 | 12550 | 80043 |
| Grand Totals—Accredited, Federal, State, and Veterinary Practitioner Tests combined | | | | | | | | | | | 12550 | 80043 |

*These totals include 168 herds with 3623 cattle which are also under Federal Supervision.

**Counties under Area Test.

## MARYLAND PASTURES

By J. E. METZGER, College Park, Md.

Maryland pastures are of two distinct types, namely, permanent pastures and rotation pastures. Of the two, the permanent pasture is the more important both from the standpoint of acreage and the amount of grazing secured in any season. The rotation pastures are for most part seeded hay fields, and the grazing plants consist mainly of timothy, red clover, alsike clover, and in some instances, alfalfa. The permanent pastures, on the other hand, are made up mainly of Kentucky blue-grass, white Dutch Clover, and some miscellaneous grasses such as orchard grass, redtop, bent grass, and Canadian blue-grass.

Permanent pastures are to be found in all parts of Maryland, and under all conditions of soil and climate found in the State. The best blue-grass pastures are located in the limestone valleys, and on the fine-textured soils of the Piedmont and Costal Plain areas. The white clover abounds mostly in the loams and silt loam soils of the Coastal Plain, and on the Manor soils of the Piedmont. The pasture problem in Maryland resolves itself to an understanding of the soil conditions and the climatic adaptation of the various grasses that might be used for forage purposes.

The most comprehensive study of the relation between soil and pasture plants, available for Maryland, was made during the summers of 1934 and 1935. A total of 382 permanent pastures were studied and the relations between grass and soil conditions were determined. In this study, records were taken on pastures as new as five years, and as old as more than one hundred years of continuous grazing. Many of the old pastures are far superior to some of the new pastures. Such a condition is possible largely through the disappearance of poorly adapted strains of blue-grass and white clover and good management on the part of the owner of the pasture. Inasmuch as conditions are so variable in the State, it is best to subdivide it into its natural regions and give some facts concerning pasture conditions, together with the important recommendations.

The pastures of the northern part of the Eastern Shore, bordering on the Chesapeake Bay, are made up of about one-third white Dutch Clover, and about one-fifth blue-grass, the remainder being made up of various grasses and weeds among which are the edible crabgrass, and non-edible hard-stemmed types of weeds and thistles. White Dutch clover seems to thrive only where the phosphorus and potash are present in sufficient amounts. These two elements seem to be more important in these areas than the lime, although it should be noted that a reasonable amount of active lime is necessary to maintain the proper soil conditions for retaining a sufficient supply of available phosphorus. In general, the soils of this area are more favorable for white clover than any other section of the State.

Pasture conditions in Southern Maryland and in the southern part of

the Eastern Shore are quite similar. In both cases the amount of blue-grass in pastures is very low. Likewise the potash and phosphorus supplies seem to be too low for the best production of white clover. Among the grasses that seem to be most productive in these areas is orchard grass. Another grass that is found rather extensively, and which makes good summer pasture, is Bermuda grass. Bermuda grass, on the other hand, is a very troublesome weed in cultivated fields, and its production cannot be encouraged. These two sections of the State are also the most favorable areas for the production of the annual legume, lespedeza. Both the Korean and the Japan clover types are to be found throughout the area, and both of them seem to have a very important economic position. The Japan clover apparently will grow on soil that is much more in need of lime than is the case of the Korean types. For grazing purposes the Japan clover or Common lespedeza seems to be preferred by animals. The Korean lespedeza grows taller, is more woody, and is perhaps at its best when used for hay. By slightly increasing the lime content of the soils of these areas and by use of fertilizers high in phosphorus, with a medium amount of potash, such as a 4-12-4, lespedeza should completely solve the summer grazing problem throughout these two sections. Where late fall and winter pasture is desired, rye may be planted after the lespedeza has ripened seed. Where this is practiced only sufficient stirring of the soil to secure a light covering for the rye should given.

In the Piedmont section where most of the livestock is located, permanent pastures have a very important place in the farm economy. Throughout this area are to be found many hillsides that are too steep for cropping purposes, and many areas along the streams that overflow during heavy rains. Such areas will return more per acre if used for pasture than if used for the usual feed and grain crops. Wherever pastures are well managed throughout this section fine stands of Kentucky blue-grass and white clover are produced. It is only on the pastures that are neglected both as to their lime requirement and phosphorus requirement, that thin, unproductive pastures are found. Inasmuch as the number of livestock per farm is high in this area, much overgrazing is done on many farms. In fact the survey shows that 10 per cent of all pastures in this area are grazed for the entire year. Overgrazing, lack of lime, and insufficient phosphorus are the principal problems in this area. To this may be added, however, the possibility of better control of weeds through mowing of the pastures at least once, preferably in August each year. Information on the frequency of lime and fertilizer applications and on the length of time that a single application will be adequate, is not conclusive. A good program for this area would be an application of about 200 pounds of 4-12-4 fertilizer each three years. In order to divide the expense, we would suggest that only a third of the entire pasture be fertilized in any year. It is also suggested that pastures be subdivided in order to protect portions of it during periods when overgrazing is most injurious. A permanent pasture of 30 acres could be subdivided

into three 10-acre lots, and managed to better advantage than if the cattle were permitted to graze over the entire area. In general, the soil conditions with respect to lime and fertilizer are fair throughout the Piedmont section, but grazing in a dairy section is an intensive type of agriculture, and in order to get the most out of it, a fertilization program should be a part of the management plan.

The best blue-grass pastures in the State are to be found on the limestone soils of the Frederick and Hagerstown Valleys. Likewise, good blue-grass pastures are to be found on the limestone hills of Alleghany County, and in portions of Garrett County. The poorest pastures in the State, however, are on the mountain slopes, and on some of the DeKalb and Upshur soils in these counties. Insofar as the pastures on the limestone areas are concerned, it seems to be largely a problem of maintaining a sufficient supply of available phosphorus, mainly, and nitrogen and potash as a second consideration. White clover does not occur to the same extent on these pastures as it does on the Piedmont or northern Coastal Plain. It is possible that the rather abundant growth of blue-grass crowds out the white clover. On the other hand, it must be noted also that soil studies show the phosphorus content much lower throughout these areas than in the Coastal Plain section where white Dutch clover is found most abundantly. One of the difficulties in the limestone sections is weed control. Many of the Limestone Valley pastures are in areas where the rock outcrop occurs too frequently to permit the use of the land for cultivated crops. The rocks interfere considerably in mowing for weed control. In many instances, especially where the thistles occur, it would be profitable to do hand cutting of these large weeds. An application of 300 pounds of superphosphate once in three or four years would more than justify the expense involved. In these areas overgrazing does not occur to the same extent that it does on the Piedmont where the winters are more open. It is a fact, however, that some overgrazing does occur on many farms in the limestone valley sections. In general there is not the same need for lime on the limestone soils as on other soils, but the problem is sufficiently important to warrant an occasional checking of the lime requirement. The great need of the pastures located on the slopes of the mountains throughout this section is lime. On the average, pastures throughout the Appalachian Plateau require as much as 1½ tons per acre to bring them up to a point where blue-grass will respond well. This lime need should be supplied before much money is spent on fertilizers.

To neglect the pastures of Maryland means neglecting nearly 22 per cent of all the land area in farms. This represents a much larger loss in the use of land than can be afforded by the people of Maryland. In fact, there is nearly as much land listed as permanent pastures as the combined acreage of corn and wheat. The amount of money spent for lime and fertilizer for these two grain crops represents many-fold more dollars than is invested in pasture improvement. It is conservatively

estimated that a good lime and fertilization program carried out consistently over a period of years would more than double the forage produced on the permanent pastures of the state.

The fertilization of rotation pastures is not generally practiced. A well-planned grazing program on fields that are later to be used for hay is usually beneficial, but close grazing and the possibility of having one of these fields go into winter with a low and sparse growth, merely reduces the yield of hay or pasture the following year. Enough grazing should be done on rotation pastures to prevent the clovers from blossoming, but foraging to the extent of grazing these plants to within a few inches of the ground usually results in a sacrifice in hay tonnage, and the choice must be made between the one or the other.

Studies of hundreds of pasture fields and several thousand soil analyses from permanent pastures indicate strongly that the chief concern in the management should be the lime requirement, the amount of available phosphorus in the soil, and the possibility of overgrazing and the control of weeds. On farms where these factors are carefully and completely guarded, permanent pastures are among the most productive acres.

# REPORT

OF THE

# ANNUAL MEETING

OF THE

# Maryland Tobacco Growers' Association

## JANUARY 12, 1938

The meeting of the Maryland Tobacco Growers' Association, held as one of the unit meetings of the Farm Bureau, during January, 1938, was very well attended by the tobacco growers of Southern Maryland.

It was called to order by Hon. Thomas Parran, President of the Association, and the first speaker was Dr. F. B. Bomberger, President of the Baltimore Bank for Cooperatives, who stated that the only solution of the farmer's problems, and the only means whereby the farmer can compete with present-day methods of operations, is cooperation. He pointed out the advantageous results of cooperation achieved by producers in other countries, which showed that the farmers in those countries were absolutely destitute when operating individually, and that, to survive, and to improve their condition, they had to cooperate. Marked improvement was brought about by cooperation and the desired results were secured, and their economic condition and mode of living has surpassed that of the farmers in the United States.

Dr. Bomberger gave statistics and facts to support his statements, and he made it plain that the Maryland tobacco farmer should learn a lesson in cooperation before the farmer in this state has reached the point of destitution.

Mr. Charles Latham, of Clements, Maryland, winner of the 4-H Club trip to Chicago, Ill., appeared at the meeting and he told what he had seen on his trip. He spoke of the broadened viewpoint developed by the knowledge that he had acquired. This young man was chosen as the 4-H Club winner from Southern Maryland, because of his outstanding work, leadership and accomplishments in other lines, as well as that of growing tobacco.

Mr. George Sachse, Manager of the Maryland Tobacco Growers' Association, read the financial report of the organization, which showed that considerable progress was made in 1937, and that there was a tendency for such progress to continue through 1938. The balance sheet of the Association and its financial sheet showed that this organization is in its best condition since 1919, at which time it started to operate. Mr. Sachse also pointed out the outstanding things done by the Asso-

ciation in 1937 which were brought about through the support received from such a large number of tobacco producers.

Mr. Geo. I. Gardiner, Tobacco Salesman of the Maryland Tobacco Growers' Association reported on the operations of the tobacco market during 1937, and outlined the work that was done by the organization to establish and mantain the proper market for the sale of Maryland tobacco. He showed conclusively that what had been done by the Association in 1937 was achieved only through the support that had been received from its many members. He stated further that a continuation of this as well as stronger support, would place the organization in position to accomplish even more outstanding results in 1938.

# Third Annual Summer Meeting

of the

# MARYLAND STATE POULTRY COUNCIL

**July 21, 1937**

In conjunction with the 1937 International Baby Chick Convention, Fifth Regiment Armory, Baltimore Md.

## A. Marketing Committee

Chairman H. D. Copeland stated that this Committee had nothing of interest to report; that the situation within the state made work in this line very difficult at present, but that the Committee would probably submit a comprehensive report at the coming Winter Meeting.

### REPORT OF LEGISLATIVE COMMITTEE

## B. Legislative Committee

In the unavoidable absence of the chairman, Mr. Clarence Roberts, President Copeland reported for him as follows:

1. The act relating to the sale and transportation of poultry was passed as originally drawn, with one change; exemption of producers in the requirement for bill of sale. The Committee has recommended to the State Board of Agriculture that it, on certification of the county agent, issue transportation identification cards to bona fide producers.

2. Every dollar asked for by the president of the University of Maryland for poultry was granted by the Legislature amounting, altogether, to something like $139,000, as compared with less than $2,000 in previous years. The Committee felt special credit should be given President Byrd for standing by the poultry item in the budget in the face of pressure to economize.

3. The Committee reported no effort was made to get any money for enforcement of the Fresh Egg Law, due to certain conditions still existing, but that it was felt there would be no opposition to the appropriation when asked for.

4. The Committee further reported that it followed the hearings on the bill for voluntary grades for fruits and vegetables; that it protested against leaving eggs and poultry out of this bill; that it believed the

failure of this bill to get out of the Senate was due to its unnecessarily technical nature and would delay passage of legislation along this line in the future.

## C. Report of the Economic Stabilization Committee

By S. H. DeVault

During the last six months, work was done on two projects, namely, "An Economic Study of the Broiler Industry in Maryland" and "Some Basic Factors Pertinent to the Establishment, Organization and Operation of Production Point Cooperative Egg Auctions in Maryland."

### An Economic Study of the Broiler Industry

An economic study was made of farms specializing in broiler production for the two-year period beginning July 1, 1934 and ending June 30, 1936. One hundred and nine farms were studied for the year 1934-35, and 122 farms for the year 1935-36, making a total of 231 farm records for both years.

Production practices were studied; income, cost and profit of the business were ascertained; and an analysis was made of the data to determine the factors affecting profits.

There were 16,500,000 broilers raised commercially in the United States during the broiler year 1934-35, according to official estimates, which constituted about 3 per cent of the estimated total number of chickens raised in 1934. Broiler production in Maryland for the year 1936 was approximately 2,500,000 birds, or about 15 per cent of the estimated United States production for the broiler year 1934-35.

The size of broiler flocks varied from less than 1,000 birds to 100,000 birds raised during a year's operation.

About 75 per cent of the broiler producers raised less than 10,000 birds per year and about one-half of this number raised less than 5,000 birds.

All chicks used for broiler production, except 4.8 per cent in 1934-35, were purchased from commercial hatcheries; and about 41 per cent of the total broiler chicks for the year 1935-36 were purchased from Maryland hatcherymen.

More broilers were started in January than any other month with February coming second, October third and September fourth.

On the farms studied, the two-year average number of broilers raised per farm was 8,494. Investment averaged $1,295 per farm, or 16.4 cents per bird. The average income was $4,646 per farm, or 54.7 cents per bird. Cost per farm averaged $4,164, or 49 cents per bird. Net profit averaged $482 per farm, or 5.67 cents per bird. The total cost per 100 birds was $49.03. Feed costs averaged 25.1 cents per bird and represented about 51.2 per cent of the total cost. Cost of chicks was second in importance and averaged 11.6 cents per bird or 23.8 per cent of the

total. These two items combined amounted to 36.7 cents per bird, or 75 per cent of the total.

Profits were influenced by the following factors: (1) Gross income and costs; (2) efficiency in the use of feed; (3) efficiency in the use of labor; (4) marketing costs; (5) efficiency in the use of fuel; (6) cost of baby chicks; (7) capital investment; (8) size of the enterprise; (9) number of lots per year; (10) weight of birds at time of sale; (11) overcrowding; (12) mortality; (13) breeds; (14) feeding practices; and (15) marketing practices.

Broilers were sold at an average age of 13.5 weeks and an average weight of 2.7 pounds per bird. The most profitable weight for marketing was from 2.75 pounds to 3 pounds per bird. The most profitable method of marketing was to local buyers and truckers, and the most profitable months to market broilers were April, May, July and December.

Mortality is significant in the broiler industry. Profit decreased rather constantly as the per cent of mortality increased over 10 per cent, and a loss was sustained when the mortality exceeded 25 per cent. From each 100 chicks started, there was a loss of 6.3 birds the first two weeks; between the ages of 2 and 6 weeks, 4.6 birds died; the next three weeks, 2.8 birds per 100 died; and after the birds were 9 weeks old, only 1.4 birds per 100 started were lost.

New York received 69.4 per cent of Maryland's broilers; Philadelphia, 5.7 per cent; Baltimore, 13.3 per cent; Washington, 5.2 per cent; Newark, 3.2 per cent; and other markets, 3.2 per cent of the total number sold.

For more profitable production and marketing of broilers, the following recommendations are made. These recommendations should be interpreted in the light of existing conditions.

1. Broiler producers should make every effort to keep expenses as low as possible. On an average, feed cost should not exceed 25 cents per bird raised; and fuel should not exceed 3 cents per bird raised. Effort should be made to use fuel economically, keep the birds comfortable, but never permit chilling or overheating. Labor is most economical on flocks exceeding 8,000 birds, where one man can take care of a large number of birds efficiently.
2. Before starting the broiler season, producers should make sure the house is thoroughly clean and free from disease and infectious materials. The house should be washed with a solution of lye water or some other cleansing solution at least one week before the chicks arrive.
3. It is absolutely necessary that a dry condition be maintained at all times in the brooder house; if the litter becomes wet from either rain or from the spilling of water from the drinking fountains, it should be changed. Farmers should use a dry, dustless, absorbent litter.
4. It is most profitable to raise one or two lots of broilers per year.

5. It is most profitable to raise between 5,000 and 15,000 broilers per year.
6. Broiler producers should start with from 150 to 175 birds per 100 square feet of floor space.
7. Farmers should secure high quality chicks and give them the best of attention throughout the brooding period. The Red-Rock cross has been proven very good for broiler production.
8. Effort should be made to keep mortality under 10 per cent. The chicks should be observed carefully daily for any disease that may develop. Should disease develop a diagnosis should be made at once by a competent person and a recommended treatment used.
9. Effort should be made to develop high quality birds having yellow legs, well developed breasts and a decided yellow color to the flesh. It is most profitable to market broilers weighing 2.5 pounds or more.
10. Chicks should be marketed through the most profitable method possible. This study indicates that marketing broilers through local truckers was the most profitable.
11. Broiler producers should not use an excess amount of credit.
12. Broiler producers should use all available reports issued by market news reporting agencies as a guide in their production and marketing practices, in order that the greatest net profit may be realized.

A manuscript of the results of the broiler study for the two-year period is now being prepared. It is expected that the results of the study will be available in bulletin form sometime during the latter part of 1937.

## Some Basic Factors Pertinent to the Establishment, Organization and Operation of Production Point Cooperative Egg Auctions in Maryland

This study, which was inaugurated on July 1, 1936, and completed in June, 1937, covers the seasonal production of eggs in the principal producing areas in the State, the seasonal marketing of eggs, methods of sale, principal markets on which the eggs were sold, methods of transportation, marketing cost, prices received and general information in regard to local production, consumption and purchase of eggs.

The study was confined to two areas, namely, Baltimore, Harford, Carroll and Frederick Counties in the Piedmont Plateau region, and Wicomico, Worcester, Somerset and Caroline Counties in the Lower Eastern Shore. In the Lower Eastern Shore region, the surplus of eggs produced in the four counties above the quantity consumed in the counties was 5,287,469 dozens for the year 1935. In the four counties surveyed in the Western Shore region, the surplus of eggs above consumptive requirements in the counties was 6,542,173 dozens. These two regions represent the largest producing areas in Maryland and the quantity available for sale constitutes a large percentage of the total surplus eggs produced in Maryland.

The conditions under which the eggs were produced at the time this study was made were not favorable to the production of quality eggs in the late spring, summer and early fall months. Poor cooling facilities, the use of questionable methods for cleaning the eggs and neglect of the poultry enterprise during periods when other enterprises are pressing for time, were the unfavorable factors on some farms for the production of quality eggs.

On the basis of the farms surveyed in the Western Shore region, 30.7 per cent of the eggs were sold through wholesale merchants; 29.3 per cent to hucksters; 19.8 per cent direct to consumers; 14.9 per cent to retail merchants; 1.8 per cent to hotels and restaurants; 1.5 per cent to local stores; 1.2 per cent to hatcheries; and .8 per cent through commission merchants.

In the Eastern Shore area, 56.4 per cent of the eggs were sold through wholesale merchants; 27.9 per cent to hucksters; 7.6 per cent to hatcheries; 5.7 per cent through commission merchants; 1.7 per cent to retailers; .4 per cent to hotels and restaurants; .2 per cent to local stores; and .1 per cent direct to consumers.

Of the eggs marketed in the Eastern Shore area, 70 per cent went to the New York market; 11.7 per cent went to the Philadelphia market; 10 per cent were sold locally; 5 per cent went to the Camden, New Jersey market; 3.3 per cent to other markets such as Trenton and New Brunswick, New Jersey, while none of the eggs were reported as going to the Baltimore market. Most of the eggs in the Western Shore area were reported as going to the Baltimore market.

The volume of eggs necessary for the successful operation of an egg auction is at least 300 cases per sale. The cost of operation of an auction varies from $100 to $200 per week. The cost to producers is from 40 cents to 45 cents per case. To be successful, an auction should be patronized by a sufficient number of farmers to provide the minimum quantity of eggs for efficient and economical operation.

Based on information secured in this study, the indications are that egg auctions might be successful if located near Westminster in the Western Shore area and at Denton on the Eastern Shore. Farmers would have to improve certain practices to assure the auction of getting good quality eggs. Farmers would probably get a net return somewhat above what they are getting now by marketing through the regular channels.

## Studies in Progress

Two other studies which were inaugurated on July 1, 1937 are as follows: "The Marketing of Eggs in Baltimore" and "An Economic Study of the Hatchery Industry in Maryland".

In the egg marketing project, it is proposed to make a study of the channels of distribution of eggs, such as trends in the sale of eggs on a commission basis, outright sale on a cash basis, returns to producers,

sources of supply of eggs, prices, quality of eggs, and consumer preference.

This study will be a large undertaking, covering most all phases of the marketing of eggs, but it will serve as an intelligent basis for the formulation of a sound production and marketing program in Maryland.

The purpose of the study of the hatchery industry is to secure data on the cost of hatching day-old baby chicks; to determine the factors affecting profits; to compare the cost and hatchability of eggs from pullorum-tested and non-pullorum-tested flocks; to determine the effect of flock breed improvement practices upon the hatchability of eggs; to determine premiums paid for eggs in relation to selling price of chicks; to obtain information needed on which to base suggestions and recommendations for the more profitable production of day-old baby chicks in Maryland.

## D. Report of Committee on Disease Control

DR. H. M. DEVOLT, Chairman

### Poultry Disease Diagnosis and Control Under the Supervision of the Maryland Live Stock Sanitary Service

There is no mystery about poultry diseases. They do not drop from the sky. Flock owners not only permit diseases to develop, but often invite and encourage them by improper management. Poultry diseases are like weeds in the garden. They thrive in a seed bed of bad management, and the harvest is just another sad story. There is a continuous battle in the flock. Health on one side with Mr. Profit as manager vs. Disease on the other side, with Mr. Loss as manager, with Mr. Flock Owner the referee to see that Mr. Disease does not take advantage of Mr. Health, especially to see that there is no crowding, for if there is Mr. Disease will certainly win on an early K.O.

The prevention and control of most of our poultry diseases is largely a management problem. Using the circular diagram you have as a criterion for the prevalence of the various diseases, we could greatly reduce mortality by improvement of the conditions among our flocks. Proper rearing methods such as clean ground, clean houses, clean water, clean ration containing the essential nutrients and precaution are the chief factors necessary for the prevention and control of Infectious, Nutritional, Parasitic and Protozoan Diseases and Poisoning, which comprise 75 per cent of the diagram. It could be rightfully stated that proper management would help prevent, to a large extent, the remaining 25 per cent, constituting non-infectious and miscellaneous diseases.

The importance of a proper diagnosis of all diseases cannot be overemphasized. This can only be accomplished by the use of proper equipment and the unbiased opinion of a person trained for this type of work.

The number of specimens submitted to the Live Stock Sanitary Service Laboratories has increased each year. Marked increases were noted with the establishment of two branch laboratories, one in Baltimore and another in Salisbury. These two devote virtually full time to diagnoses while the main laboratory at College Park carries on a great deal of research work, in addition to the examination of numerous specimens. These three laboratories are so situated that there is one readily accessible to most any part of Maryland. They are maintained for service to the people by the State Board of Agriculture, and assistance will gladly be given at any time in solving poultry problems.

The diagram at the bottom of the second page you have speaks for itself regarding the official pullorum blood testing done in this State for the past ten years. The buyers of chicks have come to realize the importance of purchasing their stock from hatcheries that have had all their breeders Pullorum blood tested by persons properly trained to do this work.

There has never been any money appropriated in this State for Poultry Disease Control. It is a great burden on the Live Stock Sanitary Service to maintain sufficient personnel to carry the heavy load of Pullorum blood testing that is mostly concentrated into three or four months of the year. However, we feel the Live Stock Sanitary Service has, with some aid from practicing veterinarians, satisfactorily conducted the testing in the past. How long the officials can continue to take money from general funds for this work remains to be seen. Those who wish testing done this coming season can feel assured that their work will be properly done. However, it is essential that those wishing official testing by the Live Stock Sanitary Service must present an application as soon as convenient in order that the work may be planned so that it can be done as near the desired time as possible.

Another thing of great interest is the average size of the flocks doing official testing in this State. During the past season we tested 655 flocks with an average of 290 birds per flock. One of the Eastern states tested around 450 flocks this past season, the average size being over one thousand birds per flock. Last season 75.9 per cent of our flocks had 300 or less birds in them, with only 11 flocks (1.7 per cent) having between one and two thousand birds, and nine flocks (1.4 per cent) having over 2000.

I mention the size of these flocks to you to help show the amount of personnel necessary to conduct this work over a three or four-month period. The average number of birds which one man can test over a season is around 600 per day. If our flocks averaged 1000 birds each, one man could average around 900 tests per day or 50 per cent more than at present.

**Composite Summary of Diagnoses of Poultry Diseases for Nine Years by Maryland Live Stock Sanitary Service Laboratories.**

| *Classification* | *No. Birds* | *No. Flocks* | *Type of Disease* |
|---|---|---|---|
| Infectious diseases due to | | | |
| Filtrable Virus | 399 | 176 | Fowl Pox, Laryngotracheitis |
| Specific Bacteria | 2394 | 560 | Fowl Cholera, Fowl Typhoid, Pullorum and Aertrycke |
| Non-specific Bacteria | 33 | 23 | Air Sac and Ear Infections |
| Fungi | 35 | 11 | Aspergillosis |
| Non-infectious diseases of the | | | |
| Digestive System | 222 | 127 | Gastritis, Enteritis, Proventriculitis, Impaction |
| Reproductive System | 113 | 92 | Prolapse and Impaction of Oviduct, Ruptured Ova and Oviduct |
| Circulatory System | 22 | 22 | Internal Hemmorrhage, Pericarditis, Myocarditis |
| Respiratory System | 100 | 30 | Bronchitis, Pneumonia |
| Other Internal Organs | 445 | 161 | Hepatitis, Nephritis, Splenitis, Abdominal Cyst |
| Parasitic & Protozoan Diseases | 4250 | 1887 | Round, Thread and Tapeworms, Lice, Coccidiosis, Blackhead |
| Nutritional Diseases | 370 | 123 | Rickets, Gout, Nutritional Roup, Slipped Tendon |
| Diseases due to poisoning | 196 | 71 | Botulism, Ergotism and Metallic (Lead, Aluminum) |
| Miscellaneous | 934 | 506 | Leukemia, Injury, Cannibalism, Tumors, Abscesses |
| TOTALS | 9509 | 3789 | Not Including Pullorum Blood Testing. |

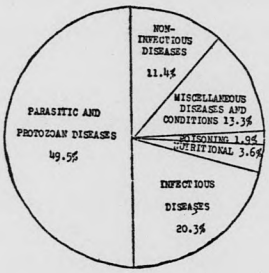
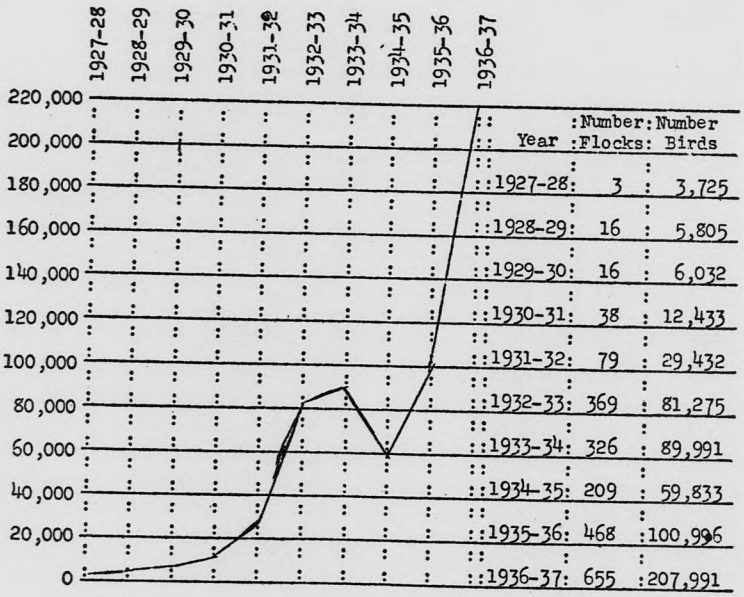



Diagram showing relative percentages of poultry diseases and conditions diagnosed on 9509 birds in 3789 flocks in the Live Stock Sanitary Service Laboratories from October 1, 1927 to September 30, 1936.

**Ten-Year Record of Pullorum Disease Blood Testing Conducted Under the Supervision of the Maryland Live Stock Sanitary Service**




| Year | Number Flocks | Number Birds |
|---|---|---|
| 1927-28 | 3 | 3,725 |
| 1928-29 | 16 | 5,805 |
| 1929-30 | 16 | 6,032 |
| 1930-31 | 38 | 12,433 |
| 1931-32 | 79 | 29,432 |
| 1932-33 | 369 | 81,275 |
| 1933-34 | 326 | 89,991 |
| 1934-35 | 209 | 59,833 |
| 1935-36 | 468 | 100,996 |
| 1936-37 | 655 | 207,991 |

## E. Report of Committee on Education and Research

PROF. GEO. D. QUIGLEY, Chairman

Your committee chairman, as he was listening to the remarks of Mr. Truslow concerning the need for advertising and the importance of developing local markets for eggs and poultry meat, could not help but think of the tremendous part that research has taken in bringing the poultry industry to its present situation of productiveness, for all of

the developments in incubation, brooding, feeding, housing and disease control have been the result of someone's research. It seems to your chairman that even though it appears that we have a temporary surplus of poultry commodities, demanding an advertising campaign to aid in distributing this surplus, that our salvation can come only from more and more research along the lines of improving the efficiency of our production and of the quality of the products we sell. In addition, as pointed out by Mr. Truslow, we must make both individual and organized effort to enhance the importance of eggs and poultry products in the American dietary.

The research which the Council, through this committee, has been interested in encouraging at the University is broadly along the lines of interior egg quality, with special emphasis upon the subject of average nutritional value of eggs having yolks of different color, and the effect of the commercial production of these yolks upon the birds which lay them. We are also interested in research which will be applicable to the problems of the Maryland Fresh Egg Law, and which should provide our leaders with facts which will enable them to deal more effectively with future problems incidental to legsilation and enforcement.

As chairman, I am pleased to report that under the leadership of Dr. Jull, head of the Poultry Department, and Dr. L. B. Broughton, head of the Department of Chemistry, and with the material assistance of Dr. H. J. Patterson, Director of the Maryland Agricultural Experiment Station, a cooperative project is now under way to study nutritional value of eggs and the effect of specific methods of handling. At present the problem is being scientifically explored, and when completed should have a definite bearing upon our problem. Progress reports and final reports will be made available to the poultrymen of the state when they are released by proper authority.

## F. Report of Publicity Committee

The Publicity Committee has supplied the public press of the State with news releases regarding meetings and other activities of the Maryland State Poultry Council, and with such news of progress by committees as it has been able to obtain. It has also cooperated with other publicity agencies in disseminating news regarding such events of interest to poultrymen as the Poultry Industries Exposition in New York, the meetings of the International Baby Chick Association in Baltimore, and the meetings of the Northeastern Poultry Producers' Council. A number of news releases regarding the World Poultry Congress have also been sent to the press.

To render most effective service, it is important that the Publicity Committee be kept in touch with activities and progress made in carrying out their programs by other committees, so far as such information is of a nature that it should be disseminated to poultrymen, or to people in general. In the case of some committees, considerable information has

been received and it has been the endeavor to make use of it as news stories. Cooperation along that line by all committees, it is believed, will provide additional material of news value and of value to the State Poultry Council and individual poultrymen.

In view of the multiplicity of agricultural programs that are in progress, or are being proposed, practically all of which endeavor to obtain space in the public press, it is more important than ever before that the material sent to editors shall be recognized by them as being of live news interest. In order that the poultry interests may receive their deserved share of space in the public press, it is desirable that all cooperate in getting the livest news available, and that it be sent in as good form as possible.

*Radio*—There is an opportunity to disseminate certain types of news by radio and the Publiicty Committee is using that agency to a limited extent. Recently, Station WBAL in Baltimore inaugurated an agricultural program, lasting from 6:00 A.M. to 7:00 A.M. A portion of the time is devoted to music and the remainder to weather and market reports and to short news items of agricultural affairs. Items regarding poultry events and activities have been included in this broadcast and such items will be sent as they are available.

A. H. SNYDER,
Chairman.

## SEMI-ANNUAL REPORT OF SECRETARY

W. H. RICE

January 1 to June 30, 1937

During the six months' period covered in this report there has been several significant developments in the poultry industry of Maryland in which your Council officers have played important parts. Some of these matters will have far-reaching and profound influences upon the industry in this State in the coming years.

### 1937 Winter Meeting and Show

Our 1937 Winter Meeting and discussions had an important bearing upon legislative and educational developments. Our meetings should deal with legislative, as well as educational problems, since the poultry industry lags far behind other branches of agriculture in official recognition of its economic importance in the State.

The 1937 Poultry Products Show in the Lord Baltimore Hotel, January 12-14, was the best all-around show of its kind yet staged in Maryland. While the exhibits of chicks were fewer than in other recent shows, the quality was the best ever shown in Maryland. Two hundred and eighty-one entries of eggs and sixteen entries of chicks competed as compared to one hundred and sixty entries of eggs and twenty-eight

entries of chicks in the 1936 Show. The Novelty classes of eggs were an innovation and developed much interest and attention.

## Legislation

*Senate Bill* 203. This bill, known as the Poultry Transportation Law, was actively sponsored by our Council officers supported by its affiliated associations and the State Farm Bureau and State Grange. This Law requires the licensing of dealers and transporters of live poultry, as well as licensing of vehicles transporting same. The State Board of Agriculture is charged with the enforcement of this law and, when it is effectively administered it should make professional poultry thieving practically non-existent in this State.

*University Poultry Department.* Our Council officers actively supported President Byrd and the Board of Regents of the University to secure the appropriations specified in the State Budget for the Poultry Department. It is very gratifying to know that $125,000 for a Poultry Department Building, and $14,000 for salaries for Department personnel were secured. These items, together with allowance for land for a new poultry research plant, total approximately $180,000, and should make a creditable start in securing for our industry at the University facilities, which will compare more favorably with the facilities provided for other branches of agriculture at the Institution.

*State Fair Board.* The 1937 Session of the Maryland General Assembly passed a law creating a Maryland State Fair Board, together with an appropriation of $10,000 annually, and provided further tax funds to come from the taxes levied on Maryland race tracks. This Board recently alloted $1400 for premiums for the winter shows for crops, Poultry and Horticulture. It apparently favors the idea of a Winter Farm Show for Maryland, and plans now being considered may result in the starting of a modest Winter Farm Show next January in Baltimore. Our Council officers are now concerned in securing a fair share of this $1400 for premiums in our State Poultry Show.

## Maryland Poultry Improvement Board

A more representative voice of breeders and producers in the official poultry improvement work in the State is a matter for which our Council has stood since its organization.

The Maryland Poultry Certification Board, which was composed of State officials, formerly administered the Poultry Improvement Work in Maryland. The Council took an active part in reorganizing this Board which now consists of 4 State officials and 5 producers which were elected by the Directors of the Council at Annapolis on May 20. At this same meeting the State-National Poultry Improvement Plan was also approved by your directors.

The development of a proposed National Turkey Improvement Plan, which has also been adopted for Maryland, has been a further step in Poultry Improvement Work during the past six months.

Your Secretary has spent considerable time on these breed improvement matters in an effort to develop a more practical and effective plan of administration and procedure.

### International Baby Chick Association Convention

Working with a Committee consisting of Dr. Jull, Mr. W. G. Ewald of the Baltimore Association of Commerce, and Mr. Evering, President of the State Hatchery Association, we were successful in getting Mayor Jackson and the Board of Estimates of Baltimore City to grant a fund of $2,000 to underwrite the entertainment features of the I.B.C.A. Convention.

Considerable publicity, as well as circular letters, have been prepared by your Secretary to build interest and attendance of Maryland people at this Convention.

Cooperation with Read's Drug Chain in developing an Egg Consumption Campaign during the Convention has occupied recent time of your Secretary. You have doubtless seen evidences of this campaign.

Credit for the splendid Council exhibit at this Convention largely goes to Mr. Ivon Morton, who prepared, as well as helped your Secretary to plan same.

### County Poultry Associations

Four County Poultry Association meetings have been attended by your Secretary during the past six months, and every assistance possible has been rendered our organizations.

Our Turkey Growers Association needs resuscitation, a hypo- or something to stimulate a bit of life and interest. Your Secretary will gratefully receive any suggestions as to how to proceed in developing a live Turkey Growers Association.

### Correspondence, Programs, Mailing, Etc.

During the first half of 1937 your Secretary has written 630 first-class letters, and 237 second-class letters on Council business affairs; 900 pieces of second-class mail such as catalogues, programs, proceedings, etc., have also been mailed out.

### Outlook

The resignation of Mr. Louis Ganssle as Chairman of our Organization Committee is a real loss to our Council. A live chairman to develop our County organizations where no organization exists, as well as enliven the existing organizations is a very important job. At least, two

counties are about ready for County Poultry associations, and with a little well-planned effort, other counties may be organized.

The Secretary gratefully acknowledges the splendid assistance given by various individuals on the Council's business affairs during recent months. In spite of an extremely busy schedule on N.E.P.P.Co. affairs in New York City, our president, Mr. Copeland, has found time to render your Secretary much valuable assistance and advice. The entire Board of Directors have been of invaluable assistance.

It is a pleasure to work with people who have an insight into the possibilities of cooperative action. As the number who have that insight increases in our industry, the progress of the industry will increase in momentum and our collective and individual selves be rewarded accordingly.

### Business Meeting

Reports of the Treasurer and Auditing Committee were approved upon motions duly made, seconded and carried.

The following motions were duly made, seconded and carried:

1. That the 1938 Poultry Products Show in conjunction with the State Agricultural Organization meetings be held.
2. That estimated cost of the Maryland State Poultry Council's participation in N.E.P.P.Co.'s Poultry Industry Exposition in New York in November be referred to the Directors for their action.
3. That the Maryland State Poultry Council recommend to N.E.P.P.Co. that it favors federation with and support of the National Poultry Producers Federation.

## REPORT OF RESOLUTIONS COMMITTEE

MRS. W. W. HOPKINS, Chairman

1. WHEREAS the members and officers of the I.B.C.A. saw fit to select Baltimore as the Convention City for 1937; and

WHEREAS the members of the Maryland State Poultry Council have seen the building of increased interest on the part of poultrymen of our State and an added spirit of cooperation as a result of the opportunity of assisting in our small way in making this splendid convention a success; and

WHEREAS the holding of the Convention in Baltimore has given us the opportunity of playing host to members of the I.B.C.A. from all over the country and thus brought us many new friends.

THEREFORE BE IT RESOLVED THAT, The Maryland State Poultry Council and Affiliated Organizations unanimously express to the I.B.C.A. Board of Directors and to their Executive Secretary, Reese V. Hicks our gratitude for having selected Baltimore as the 1937 Convention City.

2. WHEREAS, The Baltimore Association of Commerce through its executive secretary, Mr. W. G. Ewald has rendered great service to the poultry industry of Maryland through its effort in bringing the 1937 I.B.C.A. Convention to Baltimore and has given unselfishly of its time, experience, and personnel in making the Convention a noteworthy success;

THEREFORE BE IT RESOLVED THAT, The Maryland State Poultry Council and Affiliated Organizations express their thanks to the Baltimore Association of Commerce and to Mr. W. G. Ewald for splendid service, interest and cooperation which they have given.

3. WHEREAS, the holding of a convention such as that of the I.B.C.A. entails problems of housing, entertaining and extending those obligations of host and

WHEREAS, The Maryland Hotel Men's Association through its President, Mr. Harold I. Fink, has given unselfishly of its time and has shown an excellent spirit of cooperation in making the Convention a success;

THEREFORE BE IT RESOLVED THAT, the members of the Maryland State Poultry Council and Affiliated Organizations express their great appreciation for the splendid cooperation given by the Maryland Hotel Men's Association through its President, Mr. Harold I. Fink, in assisting the poultrymen of the State in their capacity as host for the Convention visitors.

4. WHEREAS, The I.B.C.A. Convention afforded a splendid opportunity for the poultrymen of Maryland to display visually by an exhibit a story of the State's industry, and

WHEREAS, the preparation of our Maryland State Poultry Council and Affiliated Organizations exhibit involved a great amount of time and effort on the part of several persons in its preparation and building;

THEREFORE BE IT RESOLVED THAT, All members who have contributed their time and effort be extended the appreciation of this Council and especially Messrs, Wade H. Rice and I. T. Morton, who have been so largely responsible for our splendid exhibit.

5. WHEREAS, New York City is our most important outlet for the surplus poultry produced in our State, and

WHEREAS, we have been conscious for some time of the effects on producers return of uneconomic methods of handling live poultry in New York City and the need for improvement in method and elimination of unfair business practices and the necessity for some one to lead the way toward more economic methods, and

WHEREAS, during the last several months we can see the definite evidence of improvement developing,

THEREFORE BE IT RESOLVED THAT, this Council extend its appreciation to the Live Poultry Terminal Market Committee of N.E.P.P.Co. for its constructive work in the interest of poultry raisers of the country and especially do we extend deep gratitude to Mr. Herbert D. Copeland, who has given so unselfishly and so completely of his time and energy.

6. WHEREAS, one of the important problems determining the success of poultrymen in this State and the country as a whole is that of Breed Improvement; and

WHEREAS, one of the aims and objectives of our organization is that of Better Poultry and Poultry Products, and

WHEREAS, we are of the opinion that a systematic and thoroughly developed program of breed improvement will work to the direct advantage of Maryland poultrymen and the further building of our industry;

THEREFORE BE IT RESOLVED THAT, we extend our appreciaton for the efforts of Dr. M. A. Jull and his associates on the reorganization of Breed Improvement Work in Maryland and our desire to cooperate in every way possible in assurnig the success of the program.

7. RESOLVED: That the Maryland State Poultry Council express its sincere appreciation and thanks to Mr. L. C. Parsons for the special Maryland issue of the New England Poultryman.

Resolutions adopted upon motion duly made, seconded and carried.

THIRD ANNUAL WINTER MEETING

OF THE

# Maryland State Poultry Council

**January 12, 1938**

**Lord Baltimore Hotel**

**Baltimore, Md.**

9:30 A.M.—President Herbert D. Copeland, Anacostia, D.C., R. No. 4, presiding.

## THE UNIVERSITY'S NEW POULTRY DEPARTMENT AND NEW POULTRY PLANT

By MORLEY A. JULL

Final plans have recently been developed for a well organized poultry department at the University of Maryland that it is expected will compare favorably with some of the best poultry departments in the country. The poultry industry of Maryland is the second most important agricultural industry in the state and deserves a good department at its

state institution to carry on teaching, extension, and research work on behalf of the industry.

A strong, well organized state poultry department is a good investment for the industry, which loses annually over $2,000,000 from chicken and turkey mortality, loss in prices from depreciated quality of eggs and poultry marketed commercially. The outstanding need of the poultry industry of Maryland is research work with a view toward solving some of the baffling problems confronting the industry. Progress in any branch of industry is based on research, which is simply a method of developing facts that make for improvement over existing conditions. If the results of research work at the University will enable flock owners to reduce losses from mortality by as much as 25 per cent, it would mean a saving to them of several hundred thousand dollars a year. Further, if the results of research work conducted at the University on factors affecting the quality of eggs and poultry meat would enable producers to secure an average of two cents per dozen more for eggs and one cent per pound more for the chickens and turkeys marketed, it would mean several hundred thousand dollars increased returns to producers.

According to the estimates of the United Statse Department of Agriculture Maryland is in the red in its egg production, that is, it does not produce enough eggs to supply its own requirements. There is need, therefore, of increasing the egg production of the farm and commercial flocks. The University will be in a position to help foster the development of superior bred-to-lay strains when its new poultry plant is completed.

The new poultry plant will comprise of 34 acres on a very desirable tract of land adjoining the University campus and will be equipped with modern colony brooding houses for brooding chicks, modern laying houses for conducting research on the inheritance of egg production, a modern brooder house for research on chick nutrition, and turkey houses and shelters for turkey research work.

Besides the new poultry plant there will be a Poultry Laboratory and Office Building that will compare favorably with any similar structure in any of the states. In fact, the poultry people of Maryland should be proud of the facilities which the University is placing at the disposal of the poultry department. The poultry industry of the state owes a deep debt of gratitude to Dr. H. C. Byrd, the President of the University, and to the Board of Regents for their splendid cooperation in making possible facilities for poultry work that will be of lasting benefit to the industry for many years to follow.

The Poultry Laboratory and Office Building will provide facilities for teachnig undergraduate and graduate students, offices and facilities for extension work, and facilities for a considerable amount of research work on factors affecting the quality of eggs and poultry meat.

The incubators and hatcheries will be located in the basement of the building, as well as cold storage facilities for eggs and dressed poultry and a demonstration egg candling test grading room.

The next floor will contain offices for the staff and secretarial help as well as classrooms and laboratories for research work.

The third floor will be comprised of laboratories for graduates in poultry research work and provision for batteries for chicks and laying hens for carrying on nutritional, physiological and other lines of poultry research work.

When the new poultry plant and the laboratory and office building are completed it is felt that the poultry people of Maryland may well be proud of its University and the work it is doing for the improvement of conditions of the industry in the state.

The Poultry Department will consist of a strong staff of specialists in each of the major branches of the industry, as well as extension specialists who will be prepared at all times to render the greatest possible service to the puoltry industry of the state.

## PLAN AND OPERATION OF THE NEW JERSEY STATE BOARD OF AGRICULTURE

By HERMAN DEME, Sewell, N. J., President
N. J. State Board of Agriculture

The New Jersey State Board of Agriculture and the Department of Agriculture, as now constituted, became part of the basic law of the state early in 1916 and became operative, July 1, 1916. Before that time, there was an old State Board of Agriculture that had dated back to 1884, that met yearly. Different groups were represented at this meeting and they discussed agricultural problems of the time to try to work out solutions for their common good. Recommendations were made from time to time to the Secretary of Agriculture, but, of course, at that time the powers of the Department of Agriculure were very much limited. The State Board of Health controlled some of the animal diseases; there was a Live stock Commission and a Commission on Tuberculosis in Animals, a State Plant Pathologist and a little later a Pathologist.

Agricultural leadesr in New Jersey saw that this was not a very good set-up to handle regulations that were coming into force at that time. Tuberculin testing was just being started, so that they, together with some far-sighted Legislators, planned the present New Jersey State Board of Agriculture and the Department of Agriculture.

**Now what is the New Jersey Plan?**

It is explained on the attached chart. Each year there is an Annual Convention of the delegates listed at the top, representing County Boards of Agriculture, the State Grange, the County Granges, the Commodity organizations, which include the State Poultry Association and the Baby Chick Association, the Florists Association and the Nurserymen's Association and Bee Keepers and practically every organization in the state, that is interested in Agriculture. There is a total of 81 delegates. The president of the State Board of Agriculture presides at these meetings. Reports on Departmental work and discussions take place after which two Board members are elected for a term of four years, which has, you will note in the next bracket, a makeup of eight members. This Board of Agriculture is directly charged by state law, with the responsibility of seeing that the Department of Agriculture is properly operated. Representation on the Board is usually pretty well balanced as regards north and south Jersey and the various commodity groups. The Board, at this organization meeting, in July, elects its own President, Vice-President and three members are appointed with a chairman to direct the affairs of each Bureau. Monthly meetings are held, when matters of policy and personnel are acted on by the Board. The Board serves entirely without pay, but expenses are paid, out of state funds. The Board is empowered to appoint the Secretary of Agriclulture and the Secretary of Agriculture also acts as Secretary of the Board. He is not appointed for any specific period but his services continue at the will of the Board and naturally, the Secretary of Agriculture is a state officer and is responsible to the State and Governor for the proper spending of appropriations. He has no political responsibilities, however, and his sole obligations, aside from the above, are to the Board of Agriculture. This has brought about a condition in the Department of Agriculture whereby career men can be brought in.

Since 1916, we have had three secretaries of Agriculture in New Jersey. Secretary Agee July 1, 1916 to June 30, 1925! Secretary Duryee July 1, 1925 to December 31, 1937 and Secretary Allen January 1, 1938.

The Board has one other appointment it can make and that is confidential Clerk to the Secretary, which is a very important position. The Bureau Chiefs and all other employees are under Civil Service and the Civil Service does try to hold examinations in such a manner as to give us qualified people.

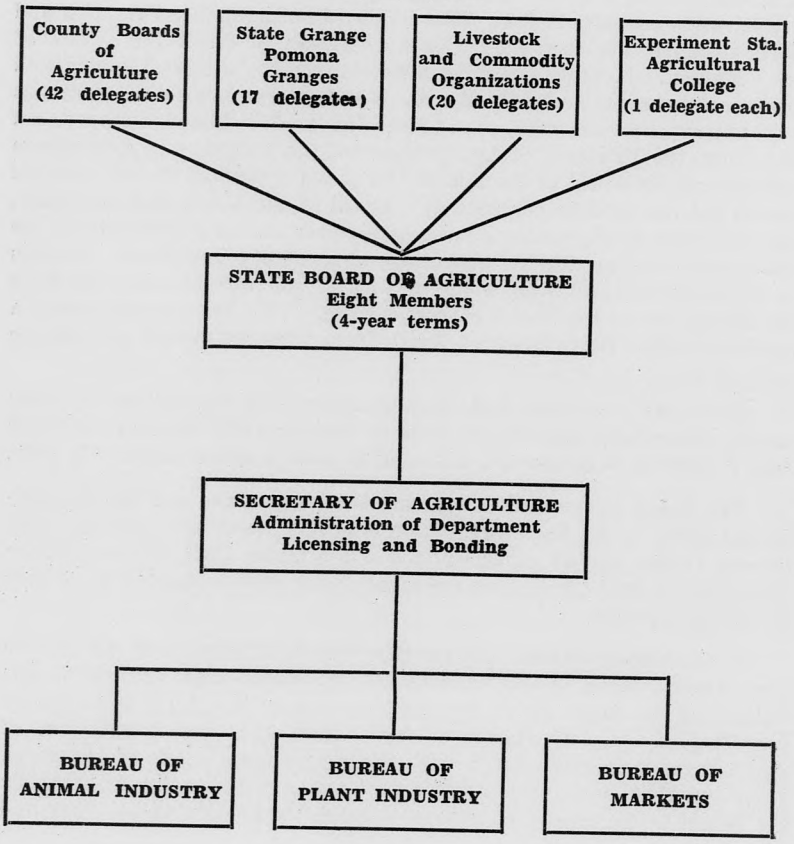
It can readily be seen that the Board of Agriculture that we have in New Jersey, being directly elected by the Farm organizations in the State and the Board being responsible by state law for the successful operation of the Department of Agriculture, that our Department of Agriculture is in close touch with the agricultural needs of the state. Problems that need regulatory consideration are usually referred by the Board to the interested groups, through the holding of hearings and

in this way regulations are very rarely set up that do not meet the needs of the people and directly affect them.

In New Jersey we have tried to differentiate between the work of the Department of Agriculture and the College and Experiment Station by having all projects that are regulatory assigned to the Department and those that are educational to the College and Experiment Station. There are, of course, times when there is an overlapping but there is close co-operation between the work of these two institutions.

I understand that here in Maryland, you folks are trying to work out a plan for an Advisory Board of Agrciulture. An Advisory Board will be of help, if it is recognized that its advice should be followed, but we in New Jersey feel that the set-up we have in our own state should be the goal for other states to follow.

## Organization of the New Jersey State Department of Agriculture


County Boards of Agriculture (42 delegates)
State Grange Pomona Granges (17 delegates)
Livestock and Commodity Organizations (20 delegates)
Experiment Sta. Agricultural College (1 delegate each)
STATE BOARD OF AGRICULTURE
Eight Members
(4-year terms)
SECRETARY OF AGRICULTURE
Administration of Department
Licensing and Bonding
BUREAU OF ANIMAL INDUSTRY
BUREAU OF PLANT INDUSTRY
BUREAU OF MARKETS

1:30 P. M. Business Session. President H. D. Copeland, presiding.

## REPORT OF THE ECONOMIC STABILIZATION COMMITTEE

By S. H. DeVault

### A Study to Determine the Source and the Quality of Chicks Purchased by Maryland Poultrymen

#### Purpose

The purpose of this study was to obtain certain information from Maryland poultry producers as to the source and quality of chicks purchased, and to obtain general information that may be used in other poultry studies and be of assistance in furthering breed improvement work in the State.

#### Method

This study was conducted by the use of a questionnaire mailed to a representative list of poultry producers in all counties of the State. In August, 1937, 2,597 questionnaires were mailed to poultry producers in Maryland. Only a small percentage of the questionnaires were returned.

Three major types of poultrymen were included in the survey. Of the poultrymen who replied, 15 per cent produced breeding stock; 84.9 per cent produced market eggs; and 46.8 per cent produced broilers.

#### Source of Chicks

During the past year (July 1, 1936 to June 30, 1937 Maryland poultrymen purchased chicks from hatcherymen in 15 states. Of the total number of chicks purchased, 32.7 per cent were purchased direct from Maryland hatcherymen; 67.1 per cent were purchased out of the State; and 0.2 per cent were purchased from dealers. About two-thirds of all chicks purchased by Maryland poultrymen were purchased from hatcherymen in other states while only one-third of the chicks were purchased from Maryland hatcherymen. On the Western Shore, 57.5 per cent of the chicks were purchased from Maryland hatcherymen and 42 per cent out of the State. On the Eastern Shore, 20.5 per cent of the chicks were purchased in Maryland and 79.5 per cent were purchased out of the State.

An attempt was made to determine the reasons why Maryland poultrymen purchase chicks outside of the State in preference to patronizing local hatcherymen. The information obtained in this survey reveals, to a certain extent, the reactions and attitudes of Maryland poultrymen in regard to the place and person from whom they purchase chicks.

The following reasons were given by Maryland poultrymen for purchasing chicks from other states:

1. About 45 per cent of the poultrymen reported that the chicks were of better quality and the price was reasonable for the quality received.
2. About 18 per cent indicated that they were well satisfied with chicks purchased in other states.
3. About 11 per cent of the people who purchased from outside of the State expressed a lack of confidence in Maryland hatcherymen and breeders.
4. The advertisements of out-of-state hatcheries appealed to about 7 per cent of the group who purchased chicks from them.
5. About 11 per cent of the poultrymen expressed numerous other reasons, and about 2 per cent expressed no reason for purchasing chicks in other states.

## Price of Chicks

Price is one of the most important items poultrymen consider in purchasing chicks. Many of the better poultrymen consider the price of chicks in relation to quality rather than use price as the basis of purchase solely. Chicks were purchased from Maryland hatcherymen last year for an average price of $9.60 per 100 chicks and from out-of-state hatcherymen for an average price of $11.61 per 100 chicks. Mortality of the chicks purchesd from the two sources averaged 12.2 per cent and 16.1 per cent, respectively. Two-thirds of the chicks were purchased out of the State at an average price of $2.01 per 100 chicks more than the price paid for Maryland chicks, with a 3.9 per cent greater mortality of chicks purchased from other states.

## Source of Chicks Purchased by Maryland Poultrymen

*(Results of Mail Questionnaire)*

| *Item* | *Number of Farms* | *Number of Chicks Purchased (Per Farm)* | *Per Cent of Total* | *Number of Chicks Raised (Per Farm)* | *Average rice Per 100 Chicks* | *Per Cent Mortality* |
|---|---|---|---|---|---|---|
| All chicks purchased | 173 | 1,957 | 100.0 | 1,668 | $10.64 | 14.8 |
| Chicks purchased from Maryland Hatcherymen | 82 | 1,352 | 32.7 | 1,187 | 9.60 | 12.2 |
| Chicks purchased out of the State | 89 | 2,552 | 67.1 | 2,143 | 11.61 | 16.1 |
| Chicks purchased from dealers | 2 | 250 | 0.2 | 220 | 9.00 | 12.2 |
| Pullorum tested chicks purchased | 144 | 2,107 | 89.6 | 1,815 | 10.47 | 13.9 |
| Non-pullorum tested chicks purchased | 29 | 1,213 | 10.4 | 937 | 10.83 | 22.7 |

## Quality of Chicks

Quality of chicks is very difficult to determine; however, pullorum testing and mortality may indicate to a certain extent the quality of chicks. In Maryland, 89.6 per cent of all chicks purchased were blood-tested, that is, the eggs were from blood-tested flocks, and 10.4 per cent were non-pullorum tested. The average mortality was 13.9 per cent and 22.7 per cent for pullorum tested and non-pullorum tested chicks, respectively. The average price paid for pullorum tested chicks, with an average mortality of 13.9 per cent, was 36 cents per 100 chicks less than the price paid for non-pullorum tested chicks, with an average mortality of 22.7 per cent.

Of the total number of chicks purchased form Maryland hatcherymen, 84.9 per cent were pullorum tested and 15.1 per cent were non-pullorum tested; and of those chicks purchased out of the State, 75.6 per cent were pullorum tested and 24.4 per cent were non-pullorum tested.

## Breed Improvement

About 13 per cent of the poultrymen reporting followed or tried to follow the Maryland Breed Improvement Program. State College men pullorum tested 7.5 per cent and licensed veterinarians, 5.2 per cent of the poultry flocks. About 26 per cent of the flock owners culled their own flocks but did no pullorum testing and 4 per cent of the flocks were culled by other persons. Apparently, there is much need for an educational program on bred improvement in the State. Poultrymen of every type should cooperate with the Poultry Department of the University of Maryland in furthering the work set forth in the State Breed Improvement Program.

## An Economic Study of the Hatchery Industry in Maryland

This report represents the results of an economic study of 110 hatcheries in Maryland for one year (July 1, 1936 to June 30, 1937). The study will be conducted for a two-year period, at the end of which time a complete analysis of the results will be made.

The average investment was $5,067 per hatchery, or $5.18 per 100 chicks hatched. The largest item of investment was in incubators, amounting to $3,421 per hatchery, or 67.5 per cent of the total; buildings were second in importance, amounting to $1,193 per hatchery, or 23.6 per cent of the total hatchery investment. These two items combined constituted 91 per cent of the total hatchery investment.

The total income averaged $8,039 per hatchery, or $8.86 per 100 chicks hatched. The value of chicks sold constituted the largest source of income, amounting to $8.14 per 100 chicks hatched or 91.8 per cent of the total income.

The total cost of hatching chicks averaged $6,772, or $7.14 per 100 chicks hatched. Cost of eggs, the largest item of expense, averaged $4.47 per 100 chicks hatched and accounted for 62.6 per cent of the total cost. Hatchery overhead and general overhead each accounted for 10 per cent of the total cost.

The net profit was $1,567 per hatchery, or $1.72 per 100 chicks hatched.

The total cost of custom hatching averaged $1.26 per 100 eggs incubated.

There were 1,164,884 dozens of eggs incubated by Maryland hatcherymen during the year 1936-37 valued at an average price of 33.9 cents per dozen. Of the 999,879 dozens of eggs purchased by hatcherymen, 635,553 dozens, or about 64 per cent, were purchased from Maryland poultrymen at an average price of 32.3 cents per dozen, and 364,326 dozens, or about 36 per cent, were purchased from poultrymen out of the State at an average price of 41.2 cents per dozen. There were 165,004 dozens of eggs incubated from hatcherymen's own flocks valued at 34.2 cents per dozen.

Of the total number of eggs incubated by Maryland hatcherymen, about 68 per cent were from official pullorum tested flocks, valued at 37.7 cents per dozen; 22 per cent were from unofficial pullorum tested flocks, valued at 30.8 cents per dozen; and 10 per cent were from non-pullorum tested flocks, valued at 32.0 cents per dozen.

In Maryland an average of 90,683 chicks were hatched per hatchery. The number of blood-tested chicks sold amounted to 82.7 per cent of the total; non-blood-tested chicks to 10.7 per cent; number of chicks kept by the operator to 4.2 per cent; and 2.4 per cent of the chicks hatched were allowed as extras. This study indicates that all hatcherymen, on the average, allowed 2.5 extra chicks per 100 chicks sold.

The outstanding breeds of chicks hatched were: Barred Plymouth Rock, 30.6 per cent; Cross-Breed, 28.2 per cent; White Leghorn, 23.0 per cent; New Hampshire Reds, 10.4 per cent; Rhode Island Reds, White Rocks, Wyandottes and other breeds made up the remaining 7.8 per cent of the total number of chicks hatched.

Maryland hatcherymen sold in Maryland 53.6 per cent of the total number of chicks hatched; in Delaware, 31.7 per cent; in Virginia, 6.4 per cent; in Pennsylvania, 4.2 per cent; and other states received 4.1 per cent of the total.

There are many other pertinent facts revealed by the results of the first year's study which will be presented in more detail at the conclusion of the second year of this study.

## Progress Report on the Marketing of Eggs in Baltimore

### Objectives of the Study

The objectives of this study are: to determine the channels of distribution of eggs from the farmer to the consumer; volume of eggs handled by dealers in Baltimore; volume of eggs stored in Baltimore storage houses and facilities and conditions under which eggs are stored in Batlimore; sources of supply (receipts by boat, rail and truck); quality of eggs; and trends in the methods of handling, grading and selling eggs. The study also includes the cost of marketing eggs from the farmer to the consumer, the consumer preference for eggs and the correlation between quality and price.

### Progress of Study

Information has been obtained from over 250 independent retail stores and approximaetly 30 retail dealers in the several retail markets throughout the city have been interviewed. Information has been obtained from four chain store organizations. Two of these are large chains and two are local small chains. Information has been secured from four meat packing companies relative to the volume of eggs handled and methods of handling the eggs. The volume of eggs stored and methods of storing have been studied for four storage houses in Baltimore. In addition, information has been obtained on shell, frozen, dry and canned eggs from approximately 30 commissionmen, brokers, wholesalers, jobbers and other large dealers.

During 1938 a consumer survey in Baltimore will be made in order to determine the correlation between the price and the quality of eggs sold in Baltimore. Eggs will be candled for a period of 6 to 12 months at approximately 50 retail stores.

## A Study to Determine the Relative Net Price Received for Eggs Sold Based Upon United States Government Grades and Eggs Marketed by Other Methods

This study is being conducted in cooperation with the State Department of Markets, and as a special phase of the project entitled "The Marketing of Eggs in Maryland with Special Reference to the Baltimore Market."

The objectives of this study may be stated as follows: to obtain data on the prcie received for eggs sold based upon United States Government grades, and for eggs sold by other methods, such as, to hucksters, to local stores, to retailers, etc., to determine the relative cost of marketing of eggs by the several methods and the net price received; to determine the

relation of size and quality to the price of eggs based upon the price received for the various government grades; and to obtain information needed on which to base suggestions and recommendations for the more profitable marketing of eggs in Maryland.

## REPORT OF BREED IMPROVEMENT COMMITTEE

### Better Breeding Stock in Maryland

By MORLEY A. JULL

It is realized on every hand that one of the greatest needs of the poultry industry of Maryland is better quality breeding stock. The survey of 99 commercial poultry farms, representing many of its best ones in the state, showed that the average egg production per bird was only 127 eggs. That is far too low a yield to give the operators even a reasonable labor income. Many of the Maryland broiler producers purchase thousands of dollars worth of chicks every year from outside of Maryland. In addtiion to that, many of our hatchery operators purchase each year from out of the state many thousands of dollars' worth of hatching eggs.

This is all because there is not being produced in Maryland in sufficient quantity the quality of hatching eggs and baby chicks desired by our commercial operators to give best results. The laying ability of the average pullet raised is below par or there would certainly be more than 127 eggs each.

Hatchery operators and flock owners supplying eggs to hatcheries really need to develop a much more advanced breeding program particularly with a view toward producing and distributing cockerels of superior breeding worth among farmers and commercial poultrymen, who should use these cockerels to improve the laying ability of their flocks.

A hatchery operator desiring to produce a superior quality chick should first develop a sound breeding program for his own flock so that he will be able to supply flock owners supplying eggs to his hatchery with outstanding cockerels. He should apply the progeny test to the pullets raised from his own flock as well as to the pullets raised by his various flock owners. This can easily be done by keeping track of the monthly records of egg production of the pullets secured from each sire providing pen matings are carried on. As a matter of fact, unless pen matings are carried on there isn't much chance of making real progress in the development of high laying strains.

A sound breeding program should include breeding for high hatchability of eggs, good livability of chicks, good rate of growth and good body size for the breed, good egg size and good egg production, as well as eggs of superior interior quality. These characters are all inherited and can be developed in a flock by the adoption of a sound system of selection and breeding.

The best breeders are the members of families that give the best results for each of the characters mentioned above. All selection work should be on the family basis. What every poultryman should realize is that its the kind of progeny produced that determines the breeding worth of a sire and a dam.

## REPORT OF POULTRY DISEASE COMMITTEE

DR. H. M. DEVOLT, Chairman

At the time the Poultry Disease Control Committee was organized as a part of the Maryland State Poultry Council, a survey of disease conditions in the State of Maryland was suggested as the most desirable activity in which this committee might engage. The circulation of a questionnaire was suggested as a means of supplementing information collected in the poultry disease laboratory regarding the kinds of diseases existing in the state, their distribution in the varous counties, and their relationship to flock management. As the subject was developed, it became apparent that the questionnaire could not be sent out at random but should be taken to a representative number of poultrymen by some individual properly qualified to obtain the desired information. A goal of 1,000 questionnaires was suggested as a suitable objective. The Chairman of the Poultry Disease Committee is at present open to suggestions as to the means of circulating the proposed questionnaires.

## REPORT OF COMMITTEE ON RESEARCH AND EDUCATION

PROF. GEO D. QUIGLEY, Chairman

The Committee on Research and Education met subsequent to the last regular meeting of the Maryland State Poultry Council, with a goodly representation from the producing industry of the state in attendance. At this meeting our past activities were discussed and policies formulated for the future. At that time it was felt that the producing industry needed research especially along the following lines:

1. A broad program on disease control research seemed to come first in importance. Management and technical control measures should both be stressed. The feeling seems to be developing in the industry that the continued high mortality, especially among laying pullets, demands both a greater recognition of the importance of controls which have already been worked out, and the extension of research looking to new types of controls. It might be observed here that the continued high mortality rate, with the frequent inability of present science to successfully combat it, causes some to wonder if such is not first-class evidence that our present controls are not effective, or at least are not being properly applied by the industry.

2. More marketing and extension of markets research, the impression being that our markets had been somewhat bogged down by the

amount of poultry meat and eggs produced the last few years.

At the same time it was decided that a policy of reporting to the Council the important and outstanding research which currently appears apropo to the general question of inferior egg quality, in which the Council has expressed an interest, should be followed.

Accordingly your chairman desires to call your attention to a number of investigations which have recently appeared in various journals. It was shown by the work of Wilhelm and Heiman at the Washington Experiment Station where the effect of feed on the color of broken out yolks was studied, that the following feeds produced color in the order named, with the color value expressed as a number according to the color rates designed by Heiman and Carver. The greater the number, the more intense the color: Dehydrated alfalfa leaf meal 19, yellow Argentine flint corn 18, domestic yellow corn 16, fresh green alfalfa 14, lawn clippings 14, kale 13, barley 12, pea meal 12, wheat 10, carrots 8, dried cow manure 8, dried horse manure 7, oats 6, soybean meal 6, rye 5, cottonseed meal 5, linseed meal 5, salmon meal 5, also that range on fresh alfalfa for 6 or 11 hours did not greatly increase the yolk color in comparison with 2 hours range.

A similar work by Heiman and Wilhelm substantiates the above in a general manner except that it brings out that additions of pigment rich feeds, as yellow corn, or alfalfa leaf meal sharply increase the pigment in the yolk in from two to four days, whereas reducing the quantity of these pigments in the ration results in only slow decrease of pigment in the yolks.

The importance of Vitamin A in the diet of the hen has been studied by a number of investigators, who have shown that there is a relationship between the vitamin A content of the diet and the vitamin A content of the egg eyolk. Recently, work by Bearse and Miller at the Western Washington Experiment Station shows that the above is not only true, but hatchability though not ferility, was increased when the vitamin A content of the hen's diet was maintained at 500 units per gram of feed. This work also showed that the vitamin A content of the yolk is responsible for the vitamin A content of the chick at hatching time and that this contributed to his growth and liveability.

Probably the most complete study along these lines has been done by Sherwood and Fraps of the Texas Experiment Station, who reported a study of the Vitamin A Requirements of Hens for Egg Production. Of particular significance to us is the fact that these investigators found that mortality was greatest in the adults which received the least vitamin A in their feed. For each four units of vitamin A in the feed, derived from yellow corn and alfalfa leaf meal, only one unit was recovered from the eggs although a recovery in excess of 25% is found when hens are laying heavily. These investigators found that for ordinary purposes 240 units of vitamin A per day is sufficient, and that this requirement can best be met by feeding dark-green, leafy plants. It might be observed here that this vitamin A requirement can be met by adding 1%

of ordinary straight, or 600 unit A, cod liver oil to a laying mash. Where hatchability is concerned, however, from 500 to 600 units are needed, requiring double this amount of oil, or the use of a fortified oil.

Certain egg nutrition studies, previously reported to you by this committee, continue at the University of Maryland. It may be recalled that a year ago a cooperative project was announced between the Department of Poultry Husabndry, Dr. Jull, head, and the Department of Chemistry, Dr. L. B. Broughton in charge. This project was to study the ability of the White Leghorn and the Barred Rock to place Vitamin A into the egg yolk, and also the effect of storage upon the vitamin A content of the egg. This work has progressed to the point where it gives promise of being completed, and detailed results made available to our poultrymen.

Several years ago the poultrymen of the state were made acquainted with the work of the Feed and Fertilizer Inspection work of the state by Mr. L. E. Bopst of the Chemistry Department of the University of Maryland. Mr. Bopst at that time outlined the duties of this office respecting poultry feeds and how that work was instrumental in guaranteeing high quality of feeds and cod liver oils in Maryland. More recently that office has inaugurated research work along nutrition lines which should further improve their technical control of quality of certain feeds, especially fishmeals.

## MINUTES OF BUSINESS MEETING

Mr. Betts reported the folowing Directiors and Delegates as being duly certified by the President and Secretary of the respective affiliated associations and entitled to voting privileges in this annual meeting.

Caroline County Poultry Association
Director—Mrs. Mildred R. Kern—Denton
Delegate—Mr. H. H. Rieck—Preston

Talbot County Poultry Association
Director—Mrs. W. W. Hopkins—Cordova
Delegates—Ivon T. Morton—Easton, R. S. Brown—Easton

Dorchester County Poultry Association
Director—A. R. Peterson—Cambridge
Delegates—Walter Lankford—Vienna, Spicer Bell—

Prince Georges County Poultry Association
Director—J. W. Snoddy—Lanham
Delegates—C. R. Nyman, Rt. No. 4, Anacostia, D.C.
J. Morgan Everett, Rt. No. 4, Anacostia, D.C.

Maryland Egg Producers Co-op
Director—H. D. Copeland, Rt. No. 4, Anacostia, D.C.
Delegates—Gordon Umstead, Olney
R. E. Clark, Rt. No. 2, Anacostia, D.C.

Maryland State Hatchery Association
Director—C. F. Hines, Sykesville

Delegates—H. E. Nock, Snow Hill

Claude Truslow, Chestertown

No directors or delegates were certified for Queen Annes or Baltimore County Poultry Associations. Upon motions duly seconded and carried, Mr. Jno. H. Moffett was recognized as Director for Queen Annes County Poultry Association, and Mrs. A. W. Satler as director for Baltimore County Poultry Association.

## SEMI-ANNUAL REPORT OF SECRETARY

W. H. RICE, College Park, Md.

The major activities of the Secretary during the past six months have largely centered around the International Baby Chick Association Convention in Baltimore, July 19-22, and the Third Poultry Industries Exposition in New York, November 2-6.

### 1937 I. B. C. A. Convention

The 1937 I.B.C.A. Convention held in the Fifth Regiment Armory, July 19-22, 1937, was the greatest poultry event ever held in Maryland. There were almost 5,000 official registrations of which 1,588 were Maryland people, the largest number of registrations from the host state in the history of I.B.C.A. conventions. The opportunity afforded for a large number of Maryland people to study the latest in poultry equipment and supplies and hear discussions on live subjects of a technical and industrial nature by leading authorities was of great value to the poultry industry of the state.

It was not easy to get this convention to Maryland, and the cooperation of all our poultry organizations, as well as the interest and attendance of Maryland poultrymen, proves that the poultry industry of our state is awakening to its possibilities.

### State Council Exhibit and Meeting

The most creditable and representative exhibit ever staged by our Council was prepared by Mr. Ivon T. Morton and your Secretary for the I.B.C.A. Convention. This exhibit portrayed the plan of organization of the Council with each affiliated organization represented by its own space.

Our 1937 Summer Meeting was held in conjunction with the I.B.C.A. Convention and was limited to business matters since the I.B.C.A. program provided outstanding educational and social features.

### Third Poultry Industries Exposition

The Council's principal participation in N.E.P.P.Co.'s Third Poultry Industries Exposition was the staging at New York, November 2-6, 1937,

of the same exhibit staged at the Baltimore I.B.C.A. Convention.

Maryland turkey breeders were quite prominent in the turkey show of N.E.P.P.Co. last November, but Maryland entries in the egg and chick departments were conspicuous by their absence.

The State and our Council was signally honored in having our President Herbert D. Copeland elevated to the Presidency of N.E.P.P.Co. last November. This was a well-deserved honor, as his deep study and untiring efforts on outstanding poultry industry problems has long since gained wide recognition.

### Correspondence, Etc.

During the period covered in this report your secretary has written 503 first-class letters and mailed 774 pieces of second-class mail such as, programs, proceedings, catalogues, etc., on Council business affairs.

### Organization Work

Preliminary Work has been done to organize a county poultry association in Wicomico and Howard Counties. It is hoped that these counties can complete their organization work early in 1938.

Efforts have also been made to interest turkey producers to organize a State Turkey Growers Association, and it is hoped this can be accomplished at this Annual Meeting.

The problem of aggressive leadership in our Maryland State Hatchery Association threatens the future of that organization. The seeming indifference of many Maryland hatcherymen towards an organization designed to work for the welfare of their industry is really pathetic. If a separate hatcherymen's organization is not practicable in Maryland a hatchery department of the Council might provide a means of effectively utilizing interest and cooperative effort of the public-spiirted hatchery operators in the state with other phases of the Council's work.

The work of organizing new county units and keeping our existing organiaztions alive to their possibilites through a well-planned program of live projects, calls for resourcefulness and effort in the development of more leaders. Without means to finance such work through paid employees, such as many other similarly organized agricultural organizations have, our progress along these lines has been quite encouraging on the whole.

## REPORT OF AUDITING COMMITTEE

Chariman C. F. Hines reported accounts in good shape and receipts for year of $2,500.24 and expenses of $1,833.42 with cash in bank of $666.82 checking in treasurer's accounts.

## MISCELLANEOUS BUSINESS

Motion was made by Mrs. W. W. Hopkins, seconded by Ivon T. Morton that N.E.P.P.Co. membership be continued for 1938. Motion carried.

Dr. M. A. Jull recommended that the Council take action to approve and elect the Maryland World's Poultry Congress Committee as tentatively drafted. This was done by a motion by Mr. H. H. Rieck seconded by Mr. A. R. Peterson and Carried.

## RESOLUTIONS

Resolutions adopted at the Annual Meeting of the Maryland State Poultry Council held at the Lord Baltimore Hotel, Wednesday, January 12, 1938.
Resolved:

1. That the Council express its appreciation to Dr. H. C. Byrd, President of the University of Maryland, for his interest in the welfare of the poultry industry of Maryland, and especially for his successful efforts in securing a fine tract of land for the University poultry research and teaching plant.

2. That the Council express its sincere thanks to Mr. Rob R. Slocum of the U. S. Department of Agriculture for his services in judging eggs in our 1938 Show.

3. That the Council express its sincere thanks to Mr. H. L. Shrader for his services as a judge of chicks in the 6th Maryland Poultry Products Show.

4. Whereas the Maryland Farm Bureau has cooperated in many ways with the Maryland State Poultry Council in promoting the welfare of the poultry industry in the State.

Be it resolved that the Council, through its secretary, expresses its thorough appreciation of the Farm Bureau's splendid cooperation.

5. That the Maryland State Poultry Council express its thanks to Mr. Ivon T. Morton for his untiring efforts in preparing the Council exhibit for the I.B.C.A. Convention.

6. That the Maryland State Poultry Council in annual meeting assembled hereby expresses its deep appreciation for the much needed financial support by the Maryland State Fair Board for premiums for the Poultry Products Show in cooperation with the affiliated associations of the Maryland Agricultural Society.

7. Whereas the poultry industry of Maryland, and especially the turkey industry has suffered a great loss through the sudden and tragic death of Mr. Richard L. Tilghman, who was carrying on a progressive turkey breeding and production program.

Be it resolved that the Maryland State Poultry Council go on record as expressing its deep appreciation of the excellent services that Mr. Tilghman performed for the turkey industry, and tender to the family the profound sympathies of the Council.

Upon motion by Mrs. Hopkins, seconded by Mr. Hines, the resolutions were adopted as read.

## ELECTION OF OFFICERS

In the ensuing election the following officers were elected to serve for 1938.

President—J. W. Snoddy, Lanham, Md.
1st Vice-President—Mrs. W. W. Hopkins, Cordova
2nd Vice-President—C. F. Hines, Sykesville
Secretary—W. H. Rice, College Park
Treasurer—Jno. J. Cowan, Bowie
Director to Maryland Farm Bureau—J. W. Snoddy
Delegates to Md. Farm Bureau—Mrs. W. W. Hopkins,
Mr. A. R. Peterson
Director to N.E.P.P.Co.—H. D. Copeland
Delegates to N.E.P.P.Co.—Mr. H. H. Rieck, Mr. J. W. Evering.

## BENEFITS TO MARYLAND THROUGH PARTICIPATION IN THE SEVENTH WORLD'S POULTRY CONGRESS DIGEST OF REMARKS

By W. D. TERMOHLEN
at the January 12, 1938 meeting
of the Maryland State Poultry Council

The Seventh World's Poultry Congress and Exposition to be staged at Cleveland, Ohio, July 28 to August 7, 1939, will be the greatest single all-inclusive poultry industry event ever held in this country. Professor Rice in his inimitable manner has told you the story of this great occasion and you can all see the opportunity presented to the nation's industry to tell the story of its extent, greatness and contribution to mankind and the challenge which faces our industry to join hands and collectively make it an outstanding success.

Every one of the 48 States has a definite part. Maryland certainly has a part to play. You are developing, under the excellent and outstanding leadership of Doctor Jull, supported by President Byrd and Dean Symons, a marvelously fine poultry department with a strong and extremely well-qualified staff.

Your first benefit will be the opportunity of showing your great University and this fine new poultry department to visitors from abroad who are expected to spend three days in Washington prior to the opening of the Congress at Cleveland. Thus an acquaintance with your State to poultry peoples of the world is a benefit to accrue.

In my own humble opinion the great benefit to you will be a unified and better coordinated and organized industry in your State. The Poultry Congress is an objective which is of interest to all aspects of your State's industry. It affords an opportunity for all poultry interests to work together toward an objective with no room for anything but complete harmony. It affords an opportunity of getting acquainted

with one another, and from acquaintance comes understanding and then can more intelligent progress be made toward industry betterment.

The Hall of Nations and States at the Poultry Congress will provide an opportunity of displaying to the thousands of visitors from this and other countries a picture of your State's poultry industry through an exhibit which you should have in the State's section of that Building. Your commercial products firms can exhibit in the Hall of Industry. The benefits to be thus obtained are obvious.

A Youth Program being planned will permit the youth of your State who are interested in poultry to show what is being done in that respect in your State.

Attendance to the Congress by hundreds of your poultry people will result in an interchange of ideas, the obtaining of new knowledge and thus aid toward the economic betterment of your industry.

The interest, cooperation and participation of each of you is essential to the success of the Seventh World's Poultry Congress.

## MARYLAND'S EXHIBIT AT THE WORLD'S POULTRY CONGRESS EXPOSITION

DR. T. C. BYERLY, Chairman

Mr. Chairman, Ladies and Gentlemen:

An exhibit to represent the poultry industry of Maryland at the Seventh World's Poultry Congress to be held in Cleveland in 1939 must be of sufficient value to the industry of the state to justify its cost. The exhibit must be so designed as to furnish the best possible picture of the Maryland poultry industry to the world at large. At the same time, it must be of permanent educational value to the people of Maryland. It should stimulate pride in the people engaged in the industry to produce a better product. It should point to new outlets for poultry products and stimulate the interest of Maryland consumers in Maryland poulry products. It should present facts which will enable the Maryland poultry industry to produce and market better products.

No one person should be permitted to dictate exactly what the exhibit is to contain. Suggestions from every source are desired by the exhibits committee and every suggestion will be given careful consideraton. Mr. Jenkins, the 4-H boys' club leader, has suggested this evening that boys and girls interested in poultry should be helped to go to the World's Poultry Congress. This should certainly be done. The poultry industry of the future depends on boys and girls now growing up and the people of the state are justly proud of their young people.

As chairman of the exhibits committee for Maryland, I wish to present a few suggestions concerning the material things to be exhibited. A good exhibit must show facts worth knowing in a simple manner so that they may be understood readily and in a striking manner so that people will stop long enough to learn them. The exhibit should be

pleasant and attractive to look at as well as striking. In addition, there should be a booklet for distribution which will amplify the facts presented in the exhibit. This booklet must be worth taking home. It must be so attractively constructed, written and illustrated that everyone will read it through. It must present information about the Maryland Poultry Industry in such a way that it will be advertised favorably to the world. But, first of all, it must be of sufficient value to the industry of the state so that every one concerned with the poultry industry of the state will want a copy. If it is good enough for Maryland, it will be good enough for the world at large.

The visual portion of the exhibit might consist of a dioramic relief map of the state showing the location and value of egg production, broiler production, turkey production, hatcheries, factories and all other phases of the industry. It should show markets and transportation routes, exports and imports of poultry and poultry products and emphasize areas in which particular types of poultry operations might be extended profitably. Pictures of Maryland illustrative of the best in the state's poultry and poultry products, pictures of real human interest and artistic merit might serve as a background for the diorama.

The booklet should extend the facts presented in the visual exhibit. A brief history of poultry in the state, and poultry recipes for which the state is famous might be included. Facts about markets and suggestions that would assist Maryland people to improve marketing facilities for poultry and its products should be presented.

The large volume of chicks, eggs, broilers and turkeys of really excellent quality produced in Maryland should be emphasized for the benefit of Maryland consumers of these products. It might be desirable to list Maryland producers who have products of demonstrated high quality for sale.

In summary, the exhibit must be of real value to Maryland. The Diorama might become a permanent exhibit at College Park. The booklet would be primarily for Maryland people. In other words, this exhibit would show to Maryland primarily, to the world incidentally, the extent, quality and importance of the Maryland Poultry Industry. The presence of a number of Maryland boys and girls who will in the future engage in the poultry industry would furnish a real assurance that the industry will be maintained and improved in the future.

## 4-H CLUBS AND OTHER YOUTH ACTIVITIES AT THE CONGRESS

By E. G. JENKINS, Boys' 4-H Club Leader,
University of Maryland

Maryland's 4-H participation in world dairy activities is widely known throughout not only the state but the world. Maryland 4-H Club folks are kneely appreciative of this opportunity to contact world poultry interests.

There will be delegates from many other countries. We will have an opportunity to exhibit "youth of a democracy". To do so we must select mature 4-H club youth. The members of the judging teams, demonstration teams and all other 4-H club delegates should be old enough and should have had sufficient experience to comprehend a World's Poultry Congress.

The Maryland Poultry Council and Extension Service staff should have as large a conception of our contact with the World's Congress as we select 4-H club folks for this event.

We pledge the 4-H Club department to active interest and to earnest endeavor in the matter of sending older 4-H club members, and, if possible, poultry and poultry products to the Congress.

We greatly appreciate what the Council and its individual members have done for poultry 4-H club work.

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